

# AIRPORT MANAGEMENT

BY

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# AIRPORT MANAGEMENT

## I. INTRODUCTION

WE have all heard of Harbour Masters and Station Masters, but how much is known of that somewhat nebulous figure—*their vis-a-vis*, who is in charge of an Airport?

At present he is called, amongst other titles, a Chief Aerodrome Officer, or an Airport Manager. I feel, however, that our latest form of transport can now demand that equal dignity be conferred on those who care for its various halting places. Accordingly, being an admirer of old customs, I suggest that they should be known as Airport Masters.

In this book, I try to give an idea of what their work is, and I will address my remarks direct to them, call them what ye may.

I am assuming that you are a complete novice in the art of airport management, and I trust that the hints contained in the following sections may help you in picking up your job, which is becoming one of increasing responsibility day by day. In this connexion I would direct attention here to the “Qualifications for Airport Managers” compiled by the Aerodrome Owners Association by whose courtesy they are published under Section 14 of this book.

I propose to base my remarks on the assumption that you are the manager of an airport equipped in

every way. Even if your airport is not so equipped, the advice contained in certain sections is applicable to all aerodromes.

All airports must have a beginning, but it will naturally be your aim and object ultimately to make yours second to none in the country, in the way of equipment and facilities for the traffic with which you have to deal.

### The Job

I would summarize your job thus—

You are there for the fundamental purpose of maintaining and operating your airport in an efficient and harmonious manner to the best of your power and resources.

At the same time you must remember the fact that you should endeavour to show the best monetary return you can on the capital invested in land, buildings, etc. You will be successful in this if you carry out the duties referred to above conscientiously.

### Co-operation between Airport Management and all Concerned

You are offering airport facilities for sale and you are primarily, to a great extent, a servant of the firms or individuals who use your airport. Do not take the attitude, just because you have been appointed to the post of airport manager, that you are in the same position as a sergeant major on the barrack square and can bellow orders to all and sundry.

Now here comes the best tip I can give you. TRY TO GAIN BY ALL MEANS IN YOUR POWER THE CONFIDENCE OF THE REPRESENTATIVES OF ALL THE VARIOUS CONCERNs WHICH USE YOUR AIRPORT.

This is perhaps your hardest, but most essential task. Once you have succeeded in this, your job, though strenuous, will become a happy one.

If by ill-chance you are one of those people who have the unhappy knack of rubbing others up the wrong way, your authorities<sup>1</sup> have made a mistake in your appointment.

To illustrate my point—

From time to time any of the operating companies may have a complaint as to, say, control of their particular aircraft on the ground or in the air, the state of their hangar, insufficient lighting, etc., and if you and the various firms or individuals are co-operating well, they will come along to your office and talk the case over quietly, when you will doubtless be able to take immediate and effective steps to satisfy them.

If no such happy footing exists, formal letters of complaint will come in to you and this may lead to acrimonious and entirely unnecessary correspondence which will only widen the breach.

If you become aware of any unhappy and unhealthy bad feeling between any sections of the community, do your best to clear the matter up. This can often be effected by having a talk to each party separately when they may realize that their bicker is a foolish one.

An unhappy airport may, on occasion, on account of ultra keen competition between certain firms, result in dangerous flying.

This may sound an extravagant statement, but I have seen it for myself.

Never give any preferential treatment to any concern or individual and let it be known if possible that

<sup>1</sup> I use this word throughout. It may mean the Government, a city corporation, or a company.

fairness to all is your motto. This is most essential if you are dealing with foreigners.

An aeroplane is an aeroplane and a pilot is a pilot, whatever their nationality.

There is a great deal of the peacemaker about your job and little of the schoolmaster, but at the same time never let your flying discipline get slack. (See Breaches of Regulations and Control of Aircraft.)

To give backing to your job I sincerely trust that you and your control officers will be issued with a warrant from the Air Ministry giving you certain powers to act under the Air Navigation (Consolidation Order).

## **2. CARE AND MAINTENANCE OF AERODROME AND EQUIPMENT**

### **(a) Surface**

This care is obviously one of your most important duties. Your worst enemy is tail skids. Luckily these abominations are becoming fewer and further between, particularly among big aircraft. The damage which a heavy skid can do in wet weather is enormous, as a long and quite deep trench is made in your turf. These trenches require constant filling in. In fact, I should dearly like to see a double landing fee payable for machines, except the very lightest types, so fitted.

The area to which you have to pay particular attention is, of course, that bordering the "tarmac." Here take my tip and have as big an apron of concrete, tarmac, or manufactured stone as you can persuade your authorities to lay down. The bigger the perimeter of this area the easier it is to preserve the most hardly used part of the grass surface.

If you have a big perimeter it is a comparatively easy and comfortable matter to lay off small areas along it. The laying off of these areas for re-turfing or re-seeding is often considered by pilots to be an unnecessary nuisance, as they may have to taxi in a more devious manner than usually. If you have the confidence of the users of your airport they will realize that you are doing it for their ultimate benefit, and not for your own amusement. If you neglect a badly worn piece of ground which is in continuous use, owing to its convenient position, a machine may get stuck there in wet weather and you will be much more unpopular than if you had laid off that area before and caused slight inconvenience.

#### *Grass-Cutting, etc.*

This is a matter to which you should draw the attention of your authorities from time to time, as and when necessary. It will be for them to decide what treatment in the way of manuring or burning is necessary to keep your turf in good condition.

#### *Sheep Grazing*

At a busy airport I do not, in principle, like the idea of this. If it is carried out, it should only be on the very strict understanding that the sheep are kept under proper control and only allowed on that part of the aerodrome which you, or your representative, select each day. This selection is, naturally, governed by the wind direction.

Grazing is, of course, of value to your aerodrome as regards the money received, state of the turf, manuring of the ground, and the lessening of grass cutting.

#### *(b) Buildings*

It should hardly be necessary to point out that you must keep careful watch to ensure that your

buildings are kept in first-class condition both inside and out.

Anything you can do to increase the amenities of passengers you must do. They normally come into the category of first-class travellers, and, although at railway stations and ports they may have to put up with dinginess and discomfort, do your best to keep the premises which they use in as clean and cheerful condition as possible.

I am convinced that the buildings of an airport which are well laid out and well maintained have an excellent psychological effect, particularly on those people who are making their first flight.

### (c) Aerodrome Equipment

#### *Lighting*

This will probably consist of:

- (1) airport location beacon, (2) floodlight(s) for illuminating the landing area, (3) boundary marking lights, (4) obstruction marking lights, (5) illuminated swinging wind tee, (6) floodlights on runways to hangars and apron.

All these lights must be kept in absolutely first-class order and should be tested daily.

You will find that at least one qualified electrician will be required to supervise the workings of these lights, and the general lighting of the buildings and hangars.

A separate generating plant to feed the aerodrome lights in the case of a local black-out is most advisable.

The more of the rest of the airport lighting which this plant can energize the better. In any case, some form of standby lighting must be available for the control tower. As a temporary method, and one which can be brought into use quickly, accumulators

(kept fully charged) wired to low voltage bulbs can do the necessary.

### Calm Conditions

These must, in law, be indicated by the display of a black ball hoisted on a mast. This is difficult to see from the air, but is easily visible by pilots before taxying out. This apparatus should be inspected from time to time. Swinging wind tees must be locked facing the direction into which aircraft must land.

To provide further assistance, at Croydon there is also a large tee on the roof of the buildings, which in normal conditions is folded over so that it is invisible from the air and is extended in calm weather to show a white surface.

If you have such a tee, make sure that the surface is kept really white.

### White Line on Aerodrome

At the suggestion of a pilot of Imperial Airways, a chalk line some 500 yards long by two feet wide was laid down a few years ago at Croydon. I strongly advise you to lay down such a line, as it has proved of great assistance to pilots when landing and taking off in foggy weather. It should be finished with an arrow head at the farthest end.

You will have, in the first instance, to decide in what direction aircraft should land and take off in foggy weather. Various factors have to be taken into account, such as obstacles at each end of the run, but in principle the longest and flattest run should be chosen.

To be of the best value this line must be kept absolutely clean and white.

## Circle and Airport Name Letters

These also must be kept scrupulously clean.

## Marking Temporary Obstructions on the Aerodrome

After sundry experiments, I eventually came to the conclusion that primarily some combination of vivid letter-box red on white background is the best combination of colours for use by day. (This applies to the colouring of fixed obstructions also, such as floodlights and boundary lights.)

Finally, a portable marker was evolved on the following lines—

The overall length is approximately six feet and consists of two faces about one foot deep hinged at right angles. When in use, the apex so formed is of course on the top.

The faces are made of laths of wood nailed longitudinally to the hinged supports and spaced out at intervals of about one inch. This allows wind to blow through them when placed on the ground and prevents their being blown over.

At a distance of a few yards the faces appear to be solid.

I suggest that each face should be painted showing the centre third letter-box red and the remaining outside thirds dead white. When snow is on the ground the red areas show out well.

To be really effective they must be kept clean and repainted at intervals.

This form of obstruction marker has great advantages, viz. it can be readily seen from a machine in the air or on the ground by day and night (in the beam of the floodlights) and, owing to its flimsy construction will not damage a machine if accidentally run over. It is also quite light for one man to carry.

For marking obstructions by night on the surface

the simplest method is to lay out paraffin hurricane lamps. These are fairly effective, both from the air and when taxying, but are liable to be blown over and put out in a high wind.

(I am assuming, of course, that your buildings and other high obstructions are fitted with permanent obstruction lights.)

### Aerodrome Fence

If this or any part of it is a solid fence, e.g. corrugated iron, and it is due for a repaint, try painting this in broken colour. At Croydon, where there is a considerable length of such fence, alternate six-foot squares are painted in black and white. This system has proved of service to pilots landing in foggy weather and is an excellent landmark in good conditions.

To complete the idea, paint the outside also in contrasting colours, but using a *different* system, e.g. narrow horizontal white strips at wide intervals on a black background.

### Roofs of Buildings

It has been found that if these are painted white, assistance is given to pilots in locating the airport in bad weather.

## 3. RULES AND REGULATIONS

The flying regulations concerning your airport are simple and there is no reason why they should not be scrupulously obeyed by all pilots using it, as, in my opinion, no real hardship is caused by their observance.

You should have a thorough working knowledge of

these. The chief of them are the "*International Convention for Air Navigation*," the "*Air Navigation Order*," and the "*Air Navigation Directions*". You should read carefully all Notices to Airmen, Ground Engineers, and Aircraft Radio Operators, and amendments to the Air Pilot.

The best and most experienced pilots prefer flying to and from an airport where the regulations are carefully observed, and they are the first to back you up where idiotic and careless pilots ignore regulations and, for instance, carry out right-hand circuits where left-hand are the practice, and vice versa, or fly after lighting-up time without displaying navigation lights.

I have heard an old hand of Imperial Airways bemoaning the fact that he had to take a machine over to a certain busy aerodrome not very far from London. He was worried simply about having to land among a lot of uncontrolled traffic.

Practically the big risk remaining in civil aviation to-day is that of collision, and anything you and your control officer can do to minimize that risk, must be done. Remember that a *Moth* through disobeying the regulations, particularly in "*QBI*"<sup>1</sup> conditions, can wreck an "airliner" and kill some forty people. This risk can be reduced to a minimum with effective control tower working and prompt dealing with offenders.

### Breaches of Regulations

As no man is perfect, and certainly not all pilots, these breaches will occur from time to time in the same sort of way as the regulations for vehicles on the road are broken every day. A driver who exceeds

<sup>1</sup> This is the three letter Code group which denotes that clouds are below 1000 feet above sea level and the horizontal visibility is below 1000 yards.

the thirty mile limit by a fraction on an open road, although in a so-called built-up area, offends against the law, but to a very minor degree.

The drunken motorist who, by careless and dangerous driving, kills one or more people is rightly indicted of manslaughter and may be very severely punished.

There is a close analogy in the air. The pilot who flies after sunset for a few minutes without navigation lights has committed an offence, though not a very serious one, but incidentally a more serious one than a lot of people think.

On the other hand, there are much more serious offences of which definite notice and action must be taken. For instance, the pilot, to whom reference has already been made, who does right-hand circuits round a busy airport, particularly in bad weather, is an absolute menace and must be severely dealt with.

The most annoying persons of all are the occasional private fliers with too much money and too few manners. These people take a delight in committing petty breaches of regulations and, in some cases, boasting of their ignorance. They may not always be the cause of dangers, but sooner or later they will be.

Now, what are you going to do with cases of a breach of the regulations?

In the first instance, there are the very minor affairs where no danger is caused. I do not think that action need be taken in each individual case, but they should all be filed for reference and, if repeated, you should then write to the firm or individual concerned.

In more serious cases, you should immediately take the matter up with the guilty party and request an explanation. If the latter is unsatisfactory, report the case to your authorities who can back you up

with a further and stronger letter. You will be a lucky man if you are acting under strong authorities, who are not afraid to act and really give you good backing.

The action suggested in the above two paragraphs will normally prevent any further trouble.

Where really serious offences are committed, or warnings regarding previous offences are ignored, there are two courses open to you—

(1) Put the matter in the hands of the police who, if sufficient evidence is available, will prosecute. (If you are a wise man go out of your way to know your local inspector. Get him interested in your airport, and the flying operations thereat. In a lot of ways you will find that the police can be very helpful to you.) A successful prosecution will stop a great deal of annoyance and bad flying in your district. Pilots will begin to think that the possibility of incurring a fine of £200 and/or six months' imprisonment is hardly worth while.

(2) Report the matter to the Air Ministry. Presumably your authorities would do this, acting on your report. The Secretary of State for Air has the power to suspend licences without further ado. If this happens to a class "B" pilot who is flying for his living, the punishment is a serious one, both in respect of that pilot's present and future career.

The Air Ministry may invite the police to prosecute, in which case the resultant publicity, though harmful to both the pilot (whether convicted or not) and those concerned, must nevertheless gain the confidence of the public in the administration of commercial aviation.

I know this section must appear to be a gloomy one; but, once the fact has been established that regulations must be obeyed by all concerned at your airport, you should have little trouble from this source.

#### 4. LOW OR NOISY FLYING

You must expect to receive complaints of these, particularly if your airport is a comparatively new one, and also if you have any night flying.

The complaints, of course, should not normally be addressed to you, but to the companies or individuals concerned.

Some complaints are, I fear, justifiable, but the majority are not.

I admit that it is bad luck on old property owners round an airport to have machines roaring over them from time to time, but the airport is licensed for use by aircraft and there it is.

Aerodromes, unfortunately for some people, have come to stay and the somewhat cruel fact remains that people in the vicinity of an airport have either got to put up with the nuisance of noise and sometimes vibration or move elsewhere.

History is repeating itself regarding this most modern form of transport. Countless people have got used to the sound of trains passing near their dwelling and working places; but think of the terrific opposition which was offered to the early railway companies.

If one dislikes the noise of the movement of rolling stock one does not, unless one is particularly unlucky placed, reside alongside a goods railway siding at a large station.

Yet you will find that people will build or occupy houses on the edge of an aerodrome, presumably chiefly because of the adjacent large unbuilt-on area, and then complain of the evil machinations of aircraft taking off and landing, regarding their chimney-pots.

You are presumably keen on doing all you can for the good of aviation and accordingly will investigate

with a further and stronger letter. You will be a lucky man if you are acting under strong authorities, who are not afraid to act and really give you good backing.

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You are presumably keen on doing all you can for the good of aviation and accordingly will investigate

each complaint which you receive, chiefly because occasionally you will get one which is well founded.

For instance a machine may take off with a very poor climb and pass very low over certain houses. There is doubtless a very good reason for this bad take off. This is where you should obtain the assistance of your local A.I.D. representative. He is empowered to call for documents and to examine aircraft, and the result may show that the machine was loaded beyond the limit allowed by its Certificate of Airworthiness or that the loading as regards the Centre of Gravity was incorrect.

I am assuming that, as referred to before, you are also in possession of an Air Ministry Warrant.

If you take a pride in your airport, you will naturally do your best to ensure that justifiable complaints are few and far between.

Again, you may get complaints caused by the silly ass who stunts low over his best girl's house near the airport (see Breaches of Regulations).

When replying to complaints, whether justified or not, one is tempted to explain why the aircraft in question was low or comparatively so. For instance, if an aircraft is landing into an unusual direction of wind, it may be fairly low over certain houses when approaching, particularly if the run of your aerodrome is not very long in that direction.

After considerable experience, however, I feel that, although one may long to teach the complainant the rudiments of flying, the shorter your reply is the better.

In it I would recommend that you included a sentence to the effect that the local police are competent to take action in the event of any infringement of the regulations on the subject of low flying.

Always refer the complaint to the company or owner concerned.

## 5. COLLECTION OF FEES

Every endeavour should be made by you to collect the fees before the aircraft leaves the airport, as endless clerical work may ensue if you do not.

After all, unless a man is a regular customer at a motor garage, with a recognized monthly or weekly account, he pays his fees, and anything else incurred for labour, petrol, and oil before he takes his car away. Why should not a pilot do likewise?

It is surprising how some pilots, when asked to pay their fees say they have no money on them, but it is equally surprising how they appear to find cash for a meal or drinks at the local hotel. These people are simply a nuisance, but doubtless your authorities will back you up well in pressing for payment.

As regards the large companies, the pilot's signature on your official form agreeing to the charges should be sufficient security for the money being paid in due course, on the first presentation of your account. The most satisfactory method of all is for the pilot or owner of aircraft who is a fairly or very regular user of your airport to give you a deposit covering the probable charges which may be incurred in (say) a month. When the deposit is nearly run out it may be automatically renewed, or a reminder from you will probably suffice.

Before a machine is housed, you should try to obtain the pilot's signature on your appropriate form in which all liability, however caused, is denied by your authorities. This form should also include clauses to the effect that you can distrain on the aircraft in certain circumstances if the fees are not paid.

The obtaining of these signatures sounds a nuisance, and some people even think it to be an unfriendly

act, but I have been saved, in some cases, much work and trouble later by securing them.

It is well worth while to have a man who has a good view over the airport available to meet all incoming machines and direct the pilots to the appropriate office<sup>1</sup> where the forms are quickly completed and signed.

A scale of your charges for all types of aircraft which are likely to land should be displayed in a prominent place, and the attention of the pilot can be drawn to it if any disagreement arises. It is also advisable to have pamphlets, giving this information, available for distribution.

If you have any doubt about the financial integrity of a company, press for outstanding amounts before you receive a notice of liquidation.

## 6. STAFF

This question will of course, in principle, be decided by the work which your airport is called upon to do.

The staff normally required at an airport is, from the point of view of your authorities, unfortunately a matter of serious financial concern. An airport, to give efficient and reliable services, must have a staff which can deal with all eventualities.

Cheese-paring in this direction is a very false economy, and an overworked staff of too small dimensions is an unhappy and unreliable one.

My opening remarks regarding gaining the confidence of the various concerns at the airport very certainly apply equally to you and your staff.

A good team of keen men and women working well with you is what you should aim for.

<sup>1</sup> Later described under the heading of "Communications Office."

Such a staff will always pull out that little more when work is abnormal without grousing.

You may say, how am I to attain this end? Well, by strict fairness, personal contact, and endeavour to understand the other person's point of view and his work. Such will at least help you to achieve your object.

### Staff Employed Directly by the Airport Manager

#### (I) *Control Officers*

These will doubtless be appointed by your authorities, but you should very definitely be consulted regarding these appointments.

This would appear obvious as they are going to be your officers and run the control side of your airport. You will know from experience, probably much better than your authorities, the type of man which you require.

I would suggest that you look for the following main qualifications.

(i) Considerable experience as a pilot. If some, or all, of this flying has been done as a commercial pilot, so much the better.

(ii) Knowledge of navigation, preferably holding a Navigator's Licence.

(iii) Level headedness. This, in emergency, is more useful than normal brilliance which fades during bad periods of QBI.

(iv) Tactful, and of good class able to handle his staff efficiently.

(v) Age, not much younger than 30 and not over 45 at time of engagement.

Now such a man is not easy to get, particularly as, up to the present time, very small salaries are offered and very great responsibilities have to be undertaken.

Regarding the training for his duties; these will be

practically entirely in the Control Tower, but he must obtain a very good working knowledge of the general operation of the airport.

In your absence he may have to attend to matters which are not strictly connected with the Control Tower.

Make certain that he studies the various regulations thoroughly and really *knows* those concerning the control of air traffic and those concerning the use of lights and signals.

If you can, make the necessary arrangements for your first control officer to be attached to an airport where modern methods of control are in force.

This applies even in greater measure to yourself, when you can learn not only this work, but something of the administrative side.

No airport manager should try and keep secret any good idea or "gadget" which he may happen upon, and accordingly should welcome the idea of showing all he can to others in the same job as himself.

#### **Staff**

##### *Cashier*

This man should be very carefully chosen. His duties at a large and busy airport are many and onerous. It need not be emphasized that he should be scrupulously honest and tactful. He will be responsible for the collection of all moneys, such as rents for hangars and offices, landing and housing fees, gas and electric light accounts, etc.

#### **Communications Office and Staff**

Such an office must exist for the purpose of—

- (i) Receiving and dispatching inter-ground station messages, whether by wireless or land telephone.
- (ii) Collection of casual landing fees.

(iii) Keeping statistics, i.e. complete record of all landings, and departures, loads, etc.

(iv) Answering innumerable questions, chiefly regarding the movements of aircraft.

This office must have a method of sending messages to the Control Tower and to the W/T Transmitting Room for inter-ground messages. The system employed for this at Croydon is pneumatic message tubes. This is quick and has proved reliable. If the question of cost is prohibitive, messengers will have to be employed, with a consequent waste of time.

### *Communications Staff*

To carry out this work which goes on night and day at a busy airport, a staff of intelligent clerks is required. The number will of course depend on the volume of traffic, but at Croydon during peak periods I found that three men were required to be on duty at one time.

These men should be chosen, apart from their general intelligence, especially for their tact. For example, the explanation of the amount payable in fees to non-regular users of the airport sometimes calls for considerable hold over the temper. There are pilots whose skill, as such, is rather apt to influence their behaviour in their dealings on the ground with those they look upon, in consequence, as their inferiors.

### *Personal Office Staff of Airport Managers*

This will consist of at least one shorthand typist, who will in practice act as your secretary. She must have a good knowledge of filing and general office routine.

She should be intelligent and capable of interviewing callers and answering the telephone in your absence.

Accordingly she must be kept closely in touch with all matters occurring at the airport.

### *Traffic Foreman*

This man has a much more responsible and difficult job than would appear at first sight.

Apart from supervising the work of the traffic hands, he has a certain amount of office work to do. This includes making up duty rosters to cover twenty-four hours a day and *seven* days a week, and in consequence days of leave have to be fitted in.

He is responsible for a certain amount of equipment and stores, such as spare wind socks, obstruction markers, hurricane lamps, and cleaning materials. He must report all breakages and demand replacements for these, and used up stores.

He must be a man whom you can trust. The type best suited for the work is, in my opinion, the ex-sergeant major, and one who is capable of realizing that he is now a civilian employee and can keep good discipline among his men by tact and example. If you can get the right man who can deal effectively and quickly with minor offences, you will have a much better staff of men than if some of them are always being brought before you.

### *Traffic Hands (Designation used at Croydon).*

You will require a staff of men who can be called semi-skilled labourers. Their duties are multitudinous and include the following—

(i) Handling of passengers' baggage and freight to and from the aircraft.

This work requires careful supervision so that no damage is done to baggage or goods. The latter is a point to watch very carefully, as one of the attractions of sending freight by air is that it can be much

more lightly packed than when sent by surface transport.

The supervision of the actual loading of the aircraft will probably be done by a representative of the company concerned, so that the various articles will be placed correctly as regards the C.G. of the aircraft.

When doing this work, the traffic hands are acting in a similar capacity to railway porters and not unnaturally expect tips from passengers. Careful watch should be kept to see that passengers are not annoyed by traffic hands soliciting for tips.

(ii) Handling aircraft on the ground.

This normally means guiding the smaller aircraft to where they should be parked. They may also be called upon to start engines, and chock up aircraft, and lift their tails around.

A certain amount of training in this is of course necessary.

I have found, from experience, that it is very unwise to allow traffic hands to do anything in the way of folding wings, etc., unless the pilot definitely requests that it be done, and then only under his personal supervision.

(iii) One or possibly two men will be employed on look out duty on the Control Tower (See Control Tower working).

(iv) Acting as messengers.

(v) Issuing tickets at the entrance to the Public Enclosure.

(vi) General cleaning of offices, etc.

(vii) Acting as gatemen.

In fact their duties are practically endless and on their engagement they should be made to understand clearly that they can be called upon to perform any work, however unpleasant.

I think the best man for the job is one who has seen service in the R.A.F. and is used to discipline.

#### *M.T. Drivers.*

M.T. drivers will be used primarily for duty standing by the fire-tender and ambulance (see Fire Fighting).

Whatever transport you may have, watch the drivers to see that they really look after the vehicles carefully and keep them spotlessly clean. There was an expression in use in the Royal Flying Corps that one could judge the efficiency of a Station by the state of its transport. I think that there still is a lot of truth in that.

When engaging a driver, a short test will usually tell whether he is sound or not. Avoid the flashy type. He is expensive in the long run.

#### *Stewardess*

Some years ago I came to the conclusion that a large airport should offer some amenities to arriving women passengers. Men trained in first aid are all very well, but I am sure that women would rather have the attention of someone of their own sex when they are feeling after-effects of a bumpy trip. Women, particularly British women, are even shy of asking a man where the cloak-room is.

This stewardess should be well qualified in first aid and should for preference be elderly or at least middle age.

She should be provided with comfortable and well-equipped accommodation.

#### *Government Staffs (other than Air Ministry)*

These staffs are naturally not under your control, but you will find that your work will bring you into

contact with them at least over the question of accommodation. They will probably consist of representatives from H.M. Customs and Excise, Home Office, C.I.D., Immigration and Medical Officers.

Little else, however, need be said except that "Customs" have very decided and unalterable views as to their requirements. This applies chiefly to the arrangement for the handling and safe keeping of bonded goods.

I have made many friends with Customs officials, but from a long experience I have found that it is not the least bit of use opposing any of their schemes, as they are a very powerful body and invariably get their own way in the end.

## 7. FIRE FIGHTING

Make certain that a sufficient number of suitable extinguishers are available and handy in the hangars and buildings. Make friends with the skipper of your local fire brigade and discuss your whole scheme of fire fighting with him. You may want his help and equipment very badly one day, and you will want it in a hurry.

I am assuming, as regards the use of water, that you have fire hydrants installed at suitable points. Your staff must be instructed in coupling up stand-pipes and hoses, and they must be able to do this quickly. They must also be instructed in the use of hand fire-extinguishers and which type to use for different types of fire.

### THE WHOLE ESSENCE OF FIRE FIGHTING, PARTICULARLY AT AN AIRPORT, IS SPEED.

I have seen a number of small fires put out on aircraft on the ground before the flames could spread

to the main parts or to the tanks, but this has only occurred as the result of very SPEEDY action.

Once an aircraft is really properly alight I know of no method of saving it from irreparable loss.

The men on duty by your fire-tender must keep the engine of that vehicle warm and ready for immediate use. They should keep careful look out on the aerodrome so that in the event of a fire and/or crash they can get under way even before the fire alarm is sounded.

Instruct your fire-tender drivers to go out to any crash (unless of a very small nature) *immediately*, whether they may see flames or not. Fires sometimes break out after an appreciable delay following a crash.

Incidentally, do not make the common mistake of making a point of sending your ambulance out to a crash to the detriment of getting your fire-tender away first. An ambulance is only required after the victims have been extricated from the machine and received first aid.

First aid equipment should be carried on the fire-tender.

Encourage as many of your staff as possible to qualify in first aid. At least one such man must be on duty during all flying hours. His services will often be called upon in respect of minor accidents which occur among the various ground staffs.

## 8. VISITORS

Visitors who wish to see some of the activities of an airport can be dealt with in two ways—

- (a) By the provision of an enclosure on the edge of the landing area and/or
- (b) By conducting parties round the buildings, etc.

As regards (a) this enclosure should give as good a view as space permits of the area to which aircraft taxi and from which they depart. In other words, let the public in this enclosure see aircraft not only in the air but on the ground at as close quarters as possible.

Insist on a really crowd-proof fence round the enclosure.

On special occasions, e.g. the start or return of some noteworthy flight, the public want to get as near the pilot, particularly if feminine, as possible—hence the restraining influence of your good railing.

If there is a local hotel, encourage its manager to make arrangements for serving refreshments in the enclosure. In fact, part of this enclosure can be turned into an outdoor café, where paterfamilias will think it worth while to come, particularly over fine week-ends. That tends to make good business for your airport and for him.

Put some permanent and durable benches up near the front of the enclosure.

Lavatories must, of course, be provided. Penny in the slot locks should pay for the necessary cleaning and maintenance of these. The wages of the man at the entrance turnstile or gate is a negligible matter compared to what he takes.

Strip numbered tickets should be used and checked daily against the cash produced.

Different coloured tickets can be used for the different amounts charged, i.e. for pedestrians, bicycles, etc.

The surface of your enclosure requires careful watching, particularly near the front railing. Clinker, well rolled in, is useful. It is obvious that no one is going to pay to come into a quagmire.

It has been the practice at Croydon for some years

to provide a guard rail ten yards in front of the enclosure railing. This consists of a single line of railing mounted on concrete posts, about 2 ft. 6 in. high. It was installed after an unfortunate incident at Croydon when a child was killed by an aircraft hitting the enclosure fence. However, in these days of almost universal wheel brakes perhaps the advisability of this is not very strong.

As regards (b) (conducting parties) the first thing you have to procure is a really good guide. To be efficient in his job he must possess many qualifications which may be described as follows—

(1) He should possess personality and tact so as to control his parties, and he should be able to answer any questions, however foolish, put to him, say, by old ladies.

(2) A good general knowledge of aircraft, particularly of those which usually come to the airport. He should study the current time-table and be able to give information regarding fares, baggage, etc. Remember that he will be asked some very pertinent questions, particularly by the youth of to-day. These boys, and sometimes girls, can from my own experience show a very high technical knowledge.

(3) He should be able to explain the aircraft control scheme which is used at the airport.

(4) He must be able to explain the lighting system of the airport.

His wages are not necessarily large, but by putting up a good show he can earn quite a lot in tips. The question of whether he should be allowed to act as agent for joy-riding and other companies is an open one, but in principle he should be stopped from soliciting in any shape or form.

In any case, the return to the airport from charging sixpence per head, for example, will be large once your airport is established and has something to show.

For instance, tens of thousands of people are shown round Croydon annually.

### Large Parties

These are frankly rather a nuisance from your point of view, albeit a paying nuisance.

I do not think that one guide can control efficiently a party of more than twenty-five persons. That means that if you have to deal with a party of a hundred you will have to provide three more guides. I have found that these large parties like to travel in a herd, arriving in three or four motor coaches, and that it does not fit in with their arrangements to arrive in smaller parties with an interval between each.

These extra temporary guides must be found from your staff somewhere and are naturally not so versatile at the job as the regular man.

However, these large parties, probably organized by one of the travel agencies, are normally, in my opinion, more sightseers than potential aircraft passengers, though a percentage will usually go up for joy-flights.

### What Visitors want to See

The average person visiting an airport wants primarily to see, at very close quarters for preference, the inside of a *giant* air liner. Now this is a very natural desire, but quite properly meets with considerable opposition from the owner of the said aircraft. These visitors if allowed to inspect the machine to their satisfaction seriously interfere with the mechanics working on it, may dirty and untidy the cabin, and if they get as far as the cockpit well—

The guide has his work cut out to prevent people smoking near an aircraft. He often has the greatest difficulty in preventing smoking even when an air-

craft is being refuelled or when the party is standing on a petrol dump. That is where the tact of the guide is badly strained. He must keep his party away from the machine and entertain them by describing its salient points—from a distance.

The second thing a number of visitors, again not unnaturally, want to see is the control tower. For obvious reasons this must be denied to them. Here again the guide should tactfully explain why this is so and give a short dissertation on what does take place in the tower.

I have often thought that a mock up of the interior of an air liner and also of a control room available for close inspection by visitors would pay for themselves handsomely in slight extra charges.

In the above I have been referring to the general public. Occasions will of course occur where arrangements can be made for specially interested or important people to be shown some more details of the airport, such as a company's engine shop, or the airport wireless station.

#### **Reduction for School Parties, etc.**

At Croydon half price is charged for children under the age of 12.

In my opinion this reduction does not go far enough and I feel that half prices, or less, should be payable in respect of parties of schoolboys and girls, also boy scouts and girl guides.

These parties are very easy to control in view of the fact that they are almost invariably accompanied by someone in authority, e.g. a school master or scout master.

They are astonishingly keen about aviation and it is a joy to watch their attentiveness to their guide when being taken round.

The youth of to-day takes flying as a ~~normal method of transport, and I feel that all reasonable facilities~~ should be given to it to increase its knowledge on the subject.

#### Literature

A guide-book should be available for issue to the general public.

This book should contain full details of the lay-out, equipment, and operation of the airport, with sketches. It should include information of the working of the various local concerns, including method of dealing with outgoing and incoming passengers, also photographs of machines.

I consider that these books should be issued free to all visitors who wish to possess them. Where reduced charges only are payable a certain percentage might be issued.

In any case these books cost little, and advertisements from the firms at the airport help to lessen this cost and add to the usefulness of the information provided.

When conducting parties round the airport the guide should refer to these books, which should be issued to visitors on arrival.

### 9. INSTRUCTIONAL FLYING

I do not consider that this type of flying should be carried out at an aerodrome worthy of the name of an airport.

The chief reason for my saying this is the rather obvious one that early soloists are unreliable—to put the matter euphemistically.

Cast your mind back to your early solos. Would

## AIRPORT MANAGEMENT

you like to have done them at a crowded airport? Further, imagine the feelings of the skipper of an airliner coming in to land at your airport.

It can be argued that, with careful liaison between the control officer and the flying instructors, early soloists will only be allowed to fly when no other aircraft are about to take off or land at the airport. This is all very well in theory, but the control officer does not know when non-scheduled aircraft may be approaching the airport.

Further, an instructor, skilled man though he may be, cannot give his fullest attention to his surroundings when with a pupil.

Unfortunately, if this type of flying is not allowed at your airport your revenue will probably suffer.

At my suggestion, instructional flying was eventually stopped at Croydon some years ago.

This is a question which your authorities will of course decide, but the above may be of help to you when your opinion is consulted, as it certainly should be.

### 10. JOY-FLYING

I am of the opinion that facilities for the public to indulge in short flights should exist at any airport.

The pilots of these aircraft are skilled men who know the airport and its vicinities, let alone its local regulations (if any), really well.

From my experience, I have come to the conclusion that these facilities should be provided by ONE concern. If several firms are competing for this trade, and after all there is only an irregular demand for such flights, somewhat ugly competition is likely to arise. This throws extra responsibility on the control officer who has to keep a very close eye on this

type of traffic apart from his other duties, particularly in bad weather.

Here again I may be encroaching on a matter which in principle is outside your province, and one that should be settled by your authorities. I am, however, writing this book mainly on the assumption that your authorities are not very technical about the affairs of an airport and I am trying to put my experience at your disposal so that you can form your own views, coupled with the knowledge of the peculiarities of your airport, and place them before your authorities.

Assuming that your authorities have decided that the single joy-flying concern is the best idea. What are the terms you are going to suggest to them to ensure that the wants of your public are adequately met?

There would appear to be a demand for the following types which should offer the company concerned a profit from their operation.

(i) *The small open machine* which takes two passengers. It seems that there is still a demand for open machines.

(ii) *The small closed machine.*

(iii) *The larger type of closed machine* or small air liner.

If a monopoly is given to one company, I would suggest that the agreement included a clause to the effect that a certain number of the above types of aircraft be always available for use. The number of these machines must naturally depend on the demand.

I am not suggesting, however, that there should be sufficient machines to cope with, say, the immediate needs of a bank-holiday crowd. On these occasions the company will probably find it worth while to charter another medium-sized machine.

I would suggest that joy-flying aircraft are operated from some space other than your main departure and arrival area.

Somewhere in the vicinity of the public enclosure is a good place. If the intending passengers are parked in this enclosure they can be conducted out to the aircraft as and when they are ready. They are out of harm's way and this procedure prevents their straying over the aerodrome or into hangars.

### III. PRESS

Newspapers want stories and pictures.

To-day anything connected with flying is big news and believe me the papers will get their stories somehow.

Therefore it is obviously better for them to get true versions of any events which appear to an editor to be worth publishing.

If you can arrange it, appoint someone at the airport, who is known to the Press, to be their representative on the spot.

This man must be absolutely impartial to all users of the airport and naturally must be one whom you can trust not to elaborate small details into a "story" which may be to the detriment of civil aviation.

When special occasions occur at your airport do not try to block the press. Consider them as part of that occasion and give them all reasonable facilities.

Unless you are given instructions not to admit the Press on any particular occasion, admit them freely.

I have always found that if one treats the reporter or cameraman with consideration, he will carry out his business in accordance with your instructions.

Possibly one feels, on occasion, that pressmen may be a nuisance, but always remember that they, also, have to earn their living.

## 12. AIRCRAFT CONTROL

I divide the operation of an airport into two main parts. Firstly, there is the general administration of the airport to which I have referred, and, secondly, there is the working of the control tower by the control officers.

You must have a thorough knowledge of what this work is and naturally it has to be carried out to your satisfaction, but beyond that LEAVE THE ACTUAL WORKING TO MEN WHO, WHEN THOROUGHLY TRAINED AND EXPERIENCED, KNOW THE INFINITE AND VARYING INTRICACIES OF THE JOB FAR BETTER THAN YOU POSSIBLY EVER CAN. Only thus can the best service be given by your airport. At the same time, encourage your officers to bring any suggestions they may have to you. Their continuous working naturally tends to make them find out any detail improvements which may render their work more "slick" and efficient.

### Control Tower and Ancillary Services.

The actual control room which I shall describe last is very closely connected with, and relies upon, the work done by the following services—

#### (i) *W/T & R/T Service between the Airport and Aircraft Direct*

These operators must be accommodated in close proximity to the control room, so that written

messages and sometimes verbal ones can be passed between the control officer and them. These operators are provided and trained by the Signals Branch of the Air Ministry. They are under the supervision of overseers appointed by the Air Ministry, and from my experience can be expected to be efficient and take a pride in their job.

A great deal is expected of them in QBI conditions and the control officer has to place great reliance in their work, as his actions are, in certain circumstances, very dependent on the information received and that which he knows is successfully sent out.

(2) *W/T Service for Transmission and Reception*

of (a) Messages between ground stations, e.g. those regarding departure and arrival times, and booking of passengers.

(b) Messages between ground stations containing weather reports.

Both (a) and (b) can be accommodated away from the control tower, in any convenient office where W/T requirements as to aerial and earth, etc., can be met. They should, however, be connected, preferably by pneumatic tube, in the case of (a) to the Communications Office, and in the case of (b) to the Meteorological Office.

These operators are also supplied by the Air Ministry and form part of the station W/T staff.

(3) *Meteorological Office*

This office comes under the control of the Meteorological Office in the Air Ministry and the staff of meteorologists is supplied therefrom.

Here all the messages received from home and foreign stations are used, firstly, to form the basis of an isobaric chart which is used for forecasting

purposes, and, secondly, are sent up to the control officer for his information and passing to aircraft when required.

This office should be connected by pneumatic tube to the control room and W/T Meteorological Room.

(4) *Communications Office*

The purpose of this office has already been described in the chapter dealing with staff.

(5) *Look outs*

There will be at least one man on duty normally on the balcony outside the control room.

He is under the immediate supervision and orders of the control officer.

His duties are—

1. To spot and identify all incoming aircraft and, as is common practice at most airports, to give the appropriate signal on what is usually some form of buzzer. Certain letters of the morse code are used for this, and all concerned then know to which company the aircraft belongs. The passenger coaches of that company are then started up and driven to the proper place to receive the passengers, and the various staffs such as, Customs, Immigration, and traffic hands are ready in their places.

One special letter is sounded when any machine not belonging to a particular company, e.g. a private flier is sighted.

2. To give the take-off signal from the tarmac and the take-off signal when the aircraft has taxied out and is ready to take off.

THESE TWO SIGNALS MUST ONLY BE GIVEN AFTER REPORTING TO THE CONTROL OFFICER AND RECEIVING HIS PERMISSION TO GIVE THEM.

3. Report any unusual incident on the aerodrome to the control officer.

Your control officers must keep a strict watch on these look outs to see that they are alert.

If a look out is slack and does not report that an aircraft wishes to take off, and in consequence the necessary signal is not given when it is safe to do so, the pilot has naturally got a very good grouse against your management. It is difficult to blame that pilot if in future he takes off without permission.

You must make every endeavour in this sort of case, and in all others, not to put yourself in the wrong.

If your management is faulty, how can you expect pilots and firms to respect it and obey your requests?

The tour of duty of a look out, if working in the open *in bad weather*, should not exceed one hour.

### Control Room

This room is in the charge of a control officer.

When traffic is heavy in QBI a second officer is necessary. In these conditions it is my definite opinion that one man alone cannot do the work safely and efficiently, and it is grossly unfair to expect him to do so. Even under normal conditions, during peak periods, a second man is desirable.

The actual working of control is described in the next chapter, and the following is the equipment and fittings which the control officer requires.

Firstly, he must know very approximately where each aircraft is in the particular area over which his control extends.

He must have a pictorial view of this, and all our experience at Croydon shows that the plotting of the position of each aircraft can be most simply done by sticking pins, with a small flag attached bearing the

colours of the various operating companies and the registration letters of the aircraft in normal use, into a  $\frac{1}{4}$  in. map covering the area concerned. Small clips indicating height can be affixed to the pins, when this information is available.

This sounds a very elementary method of plotting, namely by hand, but as far as I know, no other practical method has been devolved. A great deal of time has been given to the question of mechanical plotting, but one always comes up against the difficulties of dealing with many machines of varying speeds coming and going on different tracks.

The hand plotting is carried out by the control officer as the result of his knowledge of the normal cruising speed of the aircraft, the speed and direction of the upper winds and the reports of positions and heights given by W/T or R/T. A skilled control officer, after long practice, develops an uncanny skill in being able to form a mental picture of the position of aircraft with which he is working.

(In this latter connexion your control officers may report to you that pilots are giving inaccurate information. This is sometimes noticed during QBI when a pilot is making a praiseworthy (?) but dishonest endeavour to obtain an earlier landing turn than that to which he is entitled. Do not fail to take up such cases with the firm concerned, with a view to having such unfair and sometimes dangerous practices stopped.)

#### **Logging of Information on Movement of Aircraft**

This must be done by the control officer either by—

(a) entering all information received in a log book,  
or

(b) filing each message in a special docket for each machine.

In either case the control officer has a record to which immediate reference can be made.

### Lights

Reference has already been made to these in Section 2(c).

The switches for their operation, with the possible exception of those illuminating the tarmac and the immediate vicinity of hangars, should be grouped in the control room.

Whenever aircraft are expected to arrive after sunset, make certain that your control officers are aware of the importance of having the airport lit *at* sunset and not later.

This not only serves to remind pilots who may be flying in the vicinity that it is time for them to put on their navigation lights, but puts you on sure ground if you have to take up a case of a pilot flying without lights not very long after sunset.

In conditions of bad weather the station beacon, wind tee, boundary and obstruction lights should be lit irrespective of the time of day.

### Communications

The control officer must be in close touch with the services previously mentioned and with the aircraft operating companies. The ends of the pneumatic tubes should be placed in a handy position. His telephones to these services and firms, either through a private branch exchange and/or house telephone system direct, must also be handy.

### Instruments, etc.

It is obvious that such instruments as a course and distance calculator, pair of dividers, and rulers must be available.

A good supply of maps should be kept in the control room so that the control officer can trace the movements of all aircraft which may be coming to the airport from considerable distances away.

A very complete set of regulations, official notices and the Air Pilot, etc., must of course be at hand: all these must be kept strictly up to date.

#### D.F. Map

This should be in the control room where the control officer can easily get at it and plot the positions of aircraft from the bearings handed to him by the W/T operators. When the control officer is otherwise engaged, the operator, in order to save time, can plot the position and send it out, but the control officer should check up this plotting as soon as possible, as it is a navigational matter and the control officer is responsible that this plotting is correct as far as possible. There is nothing very difficult in getting a "fix," but the control officer is the proper person to decide on the actual wording of the position, as he knows what reference point is the most useful to the pilot.

### 13. CONTROL TOWER WORKING

Fundamentally, control of any kind is intended purely and simply to bring the collision risk, whether on the ground or in the air, to as near zero as the system employed and the control officers who actuate it can get it.

#### Ground Control

This control is divided into two parts—

1. That applicable to aircraft which wish to leave the tarmac and taxi out preparatory to taking off.

2. That applicable to aircraft which have taxied out, turned into wind and are ready to take off.

As regards (1) the objects of this control are (*a*) to prevent an aircraft taxiing out across the aerodrome and baulking one which may be landing, (*b*) to indicate which aircraft may taxi out.

There are various methods of carrying out this control. The method in use at Croydon is to display a green plaque on which the initial letter of the company is painted in white, e.g. "I" for Imperial Airways Ltd. There is a plaque for each company operating from the airport and the space to which they are moved when shown has a bright red background, indicating that in the absence of the display of any plaque it is dangerous for any aircraft to move. An additional plaque marked with an "X" is used in respect of aircraft other than those operated by the regular companies.

The installation is, of course, illuminated for night work.

Alternatively, a system of electric lights installed on the control tower may be used both by day and night which can be so switched as to display the required code letter.

Another system employs a man on the tarmac who flags off aircraft. This system is only of any real value where a control tower and control officer do not exist.

As regards (2) the object of this control is to ensure that an aircraft only takes off when it is safe for it to do so. It is difficult for the pilot of the aircraft with enclosed cabins to make certain that nothing is landing behind him. Admittedly in theory, if the regulation regarding the landing of other aircraft to the right of the one on the ground is carefully followed, there should be little danger in the aircraft

on the ground taking off. In practice, however, the shape and size of the aerodrome may not allow of this. Further there is always the risk of the machine taking off sustaining a burst tyre and swinging to the right, or of one or more engines not responding immediately to the throttle.

In this case also, there is more than one method of exercising control—

At Croydon this permission is given by directing a powerful marine signalling lamp on the aircraft. The beam of this light is narrow and unless two or more aircraft are very close together there should be no doubt in a pilot's mind as to which aircraft the signal is given. Experiments have been made with different coloured filters, e.g. green for go and red for do not move; these, however, were abandoned owing to the reduction in the intensity of the light and to the possibility of confusing the lights in certain conditions of sunlight.

Another which I have seen employed is to post a man out on the aerodrome at the take-off point. Pilots must then taxi round this man and get into wind. If all is clear, this aircraft is then flagged off. This system has the demerit of making pilots of lightly loaded or small aircraft taxi farther than is really necessary, and presumably is only employed where no fully equipped control tower is available.

### Control of Aircraft in the Air

The only control which has the backing of the law is that which denotes whether an aircraft may land *at night* or not.

The pilot of the aircraft should apply for permission to land by using a white light, and the control officer will reply with either a green signal or a red one. If the latter is given, the pilot must continue

to circuit the aerodrome until the former is displayed. The detail work of this signalling is laid down in the Air Navigation Order. This system has the disadvantages that cabin lights may be mistaken for the pilots' signal, or they may confuse that signal. The practical difficulty of the control officer being in the right position outside the control to give an immediate answer with his lamp, is a real one.

Alternatively, a much better system is to use R/T or W/T for these communications for aircraft so fitted. There can be no doubt as to the identity of the machine concerned and no delay in transmitting signals. I believe that there is doubt as to whether this method is legal, in any case under the existing wording of the regulations.

#### *Control of Aircraft in the Air in Conditions of Bad Visibility*

At the moment of writing the word "Control" is a misnomer. My dictionary defines it as "restraint, authority, command." Control as it exists to-day may possibly be defined as a "moral restraint", but little else. It is to be hoped that the regulations regarding QBI Procedure will soon be included in the regulations and receive the backing of the law.

Whatever the position, however, may be, your control officers must do their utmost to assist aircraft in accordance with the existing procedure.

Some system of "control" will doubtless be in force at your airport.

Collision risk, with no control, is naturally greatest in the vicinity of an airport. Any system to counter this risk is based on the very obvious principle of separating aircraft so that their paths cannot cross.

Obvious, yes, but mighty difficult with modern aircraft moving at over three miles a minute.

The system in use at Croydon has enjoyed a fair measure of success. I think that some such system will become universal at all airports. Accordingly, I will give you a brief description of its workings.

When the control officer knows from his Meteorological Reports that QBI is in force, he will give instructions for all local companies and other airports which are likely to be concerned, to be informed. The display of local QBI notices in prominent places gives pilots no excuse to say that they "did not know." During QBI conditions no aircraft may enter a zone of an approximate radius of ten miles from Croydon without permission from the control officer. When aircraft are approaching the airport, which they may do from all points of the compass, the control officer must make up his mind as to the landing order of these aircraft. This he does after receiving or calculating the estimated time of arrival of each. Thus the aircraft which he considers should arrive first is told to come straight on and try to land. The other aircraft are told what their landing order is and must keep outside the zone until given their respective signal to come on and land. These signals should not be given until the leading aircraft has not only landed, but has taxied in. QBI does not obtain where there is good visibility above cloud or fog, and there is no objection to pilots at such altitudes coming on over the airport, and circling round, waiting for the W/T or R/T signal which gives them right of way to land. In very thick weather a pilot may be given ten minutes or so when heard in the vicinity of the airport to effect his landing. If other aircraft are close behind him, if he fails to land he is told to go away and then number two aircraft is told to come on.

It will thus be seen that the last aircraft of a bunch arriving may have to wait outside the zone for an

hour or so. The pilots of these aircraft may elect to land at another aerodrome outside the zone. This is often a quicker method of getting passengers and goods to their ultimate destination.

In practice when the weather is foggy a pilot will approach the airport blind on a series of bearings from the control tower. These are passed straight out on demand from the control tower to this pilot. If you have a radio direction beacon at your airport, it will naturally be all the easier for the pilot and your control staff.

The pilot of a machine not fitted with R/T or W/T who wishes to enter the zone must land outside and telephone to the control officer for instructions as to whether and when he may proceed.

In theory, the scheme which I have outlined should ensure that a collision cannot take place in the vicinity of your airport. This arranged safety can, however, become entirely void if the instructions of the control officer are not accurately followed. Cases have occurred where pilots have landed out of their turn, giving various excuses afterwards for doing so. There is no possible vindication for this. Any such cases should be reported to the Air Ministry in the hope that sufficient action will be taken to make pilots respect the instructions of your control officers in future.

#### Control on the Ground During QBI

There is a principle that aircraft landing take precedence over those taking off. When the weather is foggy and there is an aircraft trying to land the control officer must not allow an outgoing aircraft to leave the tarmac. In very bad conditions, he should request the pilot of the outgoing aircraft to stop his engines so that the incoming aircraft may be located

by sound and the information regarding his whereabouts passed to that pilot from time to time. The control officer then has the chance of using his pyrotechnics to the best advantage. The outgoing pilot and his company may object to be delayed on the ground, but they must remember that the rule applies equally to all and it may be their turn next to want all the assistance they can get from the airport when landing in foggy weather. On some occasions, there may be several aircraft outside the zone awaiting their turn to land and the aircraft about to take off may have to wait some time.

If aircraft have been kept outside the zone their petrol may be getting short, and it is possible that yours is the only aerodrome at which it is safe for them to land, for that reason.

On the other hand, if the control officer can do so he should let the outgoing aircraft go in between arrivals, he can sometimes effect this by telling the pilot to maintain a certain course and height after leaving. This is only possible when the approximate positions and heights of the incoming aircraft are known.

#### 14. QUALIFICATIONS FOR AIRPORT MANAGERS<sup>1</sup>

He should have a practical knowledge of the ground organization necessary for—

- (a) The operation of air routes.
- (b) Night flying.
- (c) Blind flying and instrument landings.
- (d) Application of wireless.
- (e) Meteorological requirements.

<sup>1</sup> The above Schedule was compiled by the Aerodrome Owners Association by whose courtesy it is reproduced.

He must have a thorough knowledge of international aeronautical legislation and of the Air Navigation Act, the Air Navigation (Consolidation) Orders, Air Navigation Directions, Notices to Airmen, Contents of the Air Pilot, and any other official aeronautical documents which contain regulations or instructions.

A knowledge of the laws and legislation governing public transport so far as such laws are applicable to air transport.

A knowledge of town planning in relation to aerodromes is desirable. That is to say, the applicant should know what steps are necessary to secure an aerodrome site in a town planning scheme and what provisions should be made to protect the site from subsequent erection of obstructions.

A sound knowledge of the responsibilities and liabilities of an aerodrome owner under common law.

A knowledge of the requirements of the surface of the aerodrome, e.g.—

- (a) Limitation of dimensions.
- (b) Gradient.
- (c) Level.
- (d) Drainage.
- (e) Boundary and obstruction markings.

A knowledge of maintenance of the surface of the aerodrome in a smooth level and good agricultural condition by—

- (a) Manuring.
- (b) Grass-cutting.
- (c) Drainage.

An elementary knowledge of the maintenance of aerodrome buildings.

A knowledge of the working of all aerodrome equipment and appliances and a knowledge of their maintenance in good working condition.

A general knowledge of the system of traffic control in the air and on the ground as in force at the time of the application for the post of manager. A more detailed knowledge will have to be gained by experience after appointment.

A good general knowledge of office routine and office organization and a knowledge of the National Health and Unemployment Acts.

An elementary knowledge of accountancy and book-keeping and the preparation of annual estimates of income and expenditure. This applies particularly in the case of candidates for municipal appointments.

A knowledge of general insurance as affecting fire, third party, etc.

# APPENDIX I

## THE CONSOLIDATED REGULATIONS

### (Air Navigation Order, 1923)

*N.B. (Regulations amended to 1st January, 1936.)*

#### NATIONALITY OF AIRCRAFT

1.—(1) An aircraft shall be deemed to possess the nationality of the State on the register of which it is entered.

(2) Aircraft registered in Great Britain and Northern Ireland, and aircraft registered in any other part of His Majesty's dominions when in or over Great Britain and Northern Ireland, shall be deemed to be, and are in this Order referred to as, British aircraft.

#### AIRCRAFT TO WHICH ORDER APPLIES

2. The provisions of this Order apply (unless the contrary intention appears)—

(a) To all British aircraft registered in Great Britain and Northern Ireland wherever such aircraft may be;

(b) To other British aircraft and foreign aircraft when such aircraft are in or over Great Britain and Northern Ireland; and for the purposes of liability under this Order, other than liability for want of registration, where an aircraft is not registered and by reason thereof has no nationality for the purposes of this Order, this Order shall apply to such aircraft when flying within Great Britain and Northern Ireland in like manner as it applies to aircraft registered in Great Britain and Northern Ireland.

#### GENERAL CONDITIONS OF FLYING

3.—(1) An aircraft shall not fly unless the following general conditions are complied with—

(i) The aircraft shall be registered and bear the prescribed nationality and registration marks and the names and residence of the owner painted on or affixed to the aircraft in the prescribed manner;

*(See A.N.D. II, Sect. I)*

(ii) The aircraft shall be certified as airworthy in the prescribed manner, and any terms or conditions on or subject to which the certificate of airworthiness was granted shall be duly complied with;

*(See A.N.D. II, Sect. II)*

(iii) The personnel of the aircraft shall be of the prescribed number and description and shall be provided with the prescribed certificates of competency and licences;

*(See A.N.D. II, Sect. XII (A))*

(iv) There shall be carried in the aircraft the prescribed documents and journey log book kept up to date in the prescribed form and manner:

Provided that—

(a) Conditions (i), (ii), and (iv) shall not apply to aircraft flown in accordance with directions or special permission in writing given by the Secretary of State under this Article, and subject to any conditions or limitations which may be laid down in such directions or permission.

*(See A.N.D. II, Sect. VI)*

(b) Condition (iii) in so far as it relates to certificates of competency and licences shall not apply in the case of candidates undergoing official tests for the purpose of obtaining a licence, or within three miles of a licensed aerodrome, a Royal Air Force aerodrome, or an aerodrome under the control of the Secretary of State, in the case of personnel whilst under instruction, or whilst engaged in a flight, in accordance with such directions as aforesaid, for the purpose of becoming eligible for the issue of a licence.

(*See A.N.D. II, Sect. XII (D)*)

(c) Condition (ii) shall not apply to balloons or kites when being flown within Great Britain and Northern Ireland and not carrying passengers for hire or reward.

(2) In this article "prescribed," in relation to aircraft other than British aircraft registered in Great Britain and Northern Ireland, means prescribed by the law of the State on whose register the aircraft is entered and in relation to British aircraft registered in Great Britain and Northern Ireland, has the meaning assigned to it by article 31 of this Order.

#### FLYING IN GREAT BRITAIN AND NORTHERN IRELAND

4.—(1) Save as hereinafter expressly provided, an aircraft shall not fly within Great Britain and Northern Ireland unless the following further conditions are complied with—

(i) The aircraft shall possess the nationality of a contracting State;

(ii) The provisions of this Order as to general safety, and as to the dropping of articles from aircraft, shall be duly complied with;

(iii) The aircraft shall not land in any prohibited area as defined in this Order and shall not fly over any such area at a lower altitude than 6,000 ft.;

(iv) Such members of the personnel of the aircraft as are British subjects shall be provided with certificates of competency and licences issued or rendered valid by a duly competent authority within His Majesty's dominions;

(v) The prescribed conditions as to the maintenance of airworthiness shall be complied with, and the prescribed certificates as to airworthiness shall be carried in the aircraft;

(vi) The aircraft shall conform to such orders as may be lawfully given in regard to it by officers of Police or of Customs and Excise:

Provided that—

(a) Condition (i) shall not apply to the aircraft of a State with which a special convention relating to air navigation entered into by or on behalf of His Majesty is for the time being in force, so long as the conditions of the special convention are complied with; and

(b) Conditions (i) and (v) shall not apply to aircraft flown in accordance with directions or special permission in writing given by the Secretary of State under this Article, and subject to any conditions or limitations which may be laid down in such directions or permission.

(*See A.N.D. II, Sect. VI*)

(c) Condition (iv) shall not apply in the case of candidates undergoing official tests for the purpose of obtaining a licence, or within three miles of a licensed aerodrome, a Royal Air Force aerodrome, or an aerodrome under the control of the Secretary of State, in the case of personnel whilst under instruction or whilst engaged in a flight, in accordance with such directions as aforesaid, for the purpose of becoming eligible for the issue of a licence.

(*See A.N.D. II, Sect. XII (D)*)

(d) Condition (v) shall not apply to balloons or kites when not carrying passengers for hire or reward.

(2) A fixed balloon shall not be flown within Great Britain and Northern Ireland except with the special permission in writing of the Secretary of State, and subject to any conditions that may be attached to such permission, and the Secretary of State may, on the granting of such permission or subsequently, direct that the provisions of this Order or any of them shall not apply to the balloon in question, or shall apply subject to such modifications as he thinks fit.

(See A.N.D. II, Sect. VII)

#### PASSENGER AIRCRAFT

5.—(1) An aircraft carrying passengers for hire or reward shall not use as a regular place of departure or landing any place in Great Britain and Northern Ireland other than a licensed aerodrome, or an aerodrome specially approved for the purpose by the Secretary of State.

#### SCHEDULES<sup>1</sup>

6. The provisions in Schedules I to VIII inclusive to this Order shall have effect as part of this Order, and shall be duly observed by all persons concerned in the cases to which they relate, that is to say—

Schedule	Subject matter
I	Registration and marking of aircraft.
II	Certificates of airworthiness for aircraft; periodical overhaul and examination; detention of unairworthy aircraft.
III	Log books.
IV	Rules as to lights and signals and rules for air traffic.
V	Licensing of personnel.
VI	Fees.
VII	Prohibited areas.
VIII	Customs rules as to aircraft arriving in or departing from Great Britain and Northern Ireland.

#### AERODROMES

7.—(1) A place in Great Britain and Northern Ireland shall not be used as a regular place of landing or departure by aircraft carrying passengers for hire or reward, unless it is licensed for the purpose by the Secretary of State, and any conditions of such licence are complied with.

(2) Every aerodrome which is licensed for public use or which is open to such use by British aircraft upon payment of charges shall to the same extent and upon the same conditions be open to use by aircraft possessing the nationality of a contracting State.

(3) In every aerodrome to which the last preceding paragraph applies there shall be a single tariff of charges, including charges for landing and length of stay, applicable alike to British and foreign aircraft, and such tariff shall be in such form and on such a scale as may be directed or approved by the Secretary of State, and shall be kept exhibited in a conspicuous place at the aerodrome.

(4) In the case of any contravention of or failure to comply with this article, the proprietor of the aerodrome shall be deemed to have acted in contravention of or, as the case may be, failed to comply with this Order.

<sup>1</sup> See also Schedule IX which reproduces Annex "H" of the International Convention.

(5) Paragraphs (1), (2), and (4) of this article shall not apply to Royal Air Force aerodromes or aerodromes under the control of the Secretary of State, the use of which has been sanctioned by the Secretary of State, but any directions of the Secretary of State as to the use of such aerodromes shall be complied with.

(See A.N.D. II, Sect. XV)

#### ACCESS TO AERODROMES AND FACTORIES

8.—(1) Any person authorized by the Secretary of State shall have the right of access at all reasonable times to any aerodrome for the purpose of inspecting the aerodrome, and any person so authorized and any police constable shall have the right of access at all reasonable times to any place to which access is necessary for the purpose of carrying out his powers and duties under this Order.

(2) All military aircraft belonging to or employed in the service of His Majesty shall have at all reasonable times the right of access to any licensed aerodrome, subject to the conditions of the licence.

(3) During the construction of an aircraft for which a certificate of airworthiness is desired, any person authorized by the Secretary of State shall, at all times during working hours, have the right of access for purposes of inspection to that portion of the shops in which parts are being manufactured or assembled, and to drawings of the parts under inspection, whether at the works of the main contractor or of sub-contractors.

#### GENERAL SAFETY PROVISIONS

9.—(1) An aircraft shall not fly over any city or town within Great Britain and Northern Ireland except at such altitude as will enable the aircraft to land outside the city or town should the means of propulsion fail through mechanical breakdown or other cause:

Provided that this prohibition shall not apply to an aircraft which is departing from, or about to land at, a licensed aerodrome, a Royal Air Force aerodrome, or an aerodrome under the control of the Secretary of State, whilst the aircraft is within a distance of one mile from the nearest point of the boundary of such aerodrome.

(1A) A flying machine registered in Great Britain and Northern Ireland and carrying passengers for hire or reward on a regular line or service of public air transport shall not, unless it is designed to manoeuvre on the water, be flown over the sea or any inland waters in such circumstances that, in the event of the stoppage of its engine or one of its engines, it would be unable to reach land.

(2) An aircraft in or over Great Britain and Northern Ireland shall not—

(a) Be used to carry out any trick flying or exhibition flying over any city or town area or populous district; or

(b) Be used to carry out any trick flying or exhibition flying over any regatta, race meeting or meeting for public games or sports, except where specially arranged for in writing by the promoters of such regatta or meeting; or

(c) Be flown in such circumstances as, by reason of low altitude or proximity to persons or dwellings or for any other reason, to cause unnecessary danger to any person or property on land or water.

(3) Whenever an aircraft registered in Great Britain and Northern Ireland is carrying passengers for hire or reward—

(a) The owner of the aircraft shall cause to be exhibited and kept exhibited in a conspicuous place in the aircraft a legible notice stating whether and to what extent smoking is permitted in the aircraft; and

(b) No person shall smoke in the aircraft unless, or except in so far as, smoking is stated by the notice to be permitted.

No notice exhibited in an aircraft for the purpose of the foregoing provisions

of this paragraph shall state that smoking is permitted therein unless, or except in so far as, smoking therein is authorised by the aircraft's certificate of airworthiness or by the permission in writing of the Secretary of State.

(4) No person shall smoke in an aircraft registered in Great Britain and Northern Ireland when it is not carrying passengers for hire or reward unless, or except in so far as, smoking therein is authorized by the aircraft's certificate of airworthiness or by the permission in writing of the Secretary of State.

#### CARRIAGE OF PERSONS IN UNAUTHORIZED PARTS OF AIRCRAFT

(5) Subject to the provisions of this paragraph, when an aircraft is flying within Great Britain and Northern Ireland, no person shall at any time be carried on the wings or undercarriage of the aircraft, or on or in any other part thereof which is not designed for the accommodation of the personnel or passengers, or on or in anything attached to the aircraft—

Provided that—

(a) Nothing in this paragraph shall prevent a person having temporary access—

(i) To any part of the aircraft for the purpose of executing repairs to the aircraft or adjusting the machinery or equipment thereof or for the purpose of doing anything which may be necessary for the safety of the aircraft or person or goods carried therein; or

(ii) To any part of the aircraft in which goods or stores are being carried and to which proper means of access is provided; and

(b) A person may be carried on or in any part of the aircraft, or anything attached thereto, with the permission in writing of the Secretary of State and subject to any conditions which may be attached to that permission.

#### INSTRUCTION IN FLYING

<sup>1</sup>9A.—(1) No person shall fly in an aircraft of any type, being an aircraft registered in Great Britain and Northern Ireland, for the purpose of instructing another person carried therein in flying the aircraft unless—

(a) The first-mentioned person (hereafter referred to as "the instructor") holds a pilot's licence to fly aircraft of that type, being a licence granted or rendered valid under this Order; and

(b) In a case where payment is made for the instruction (except a case where the aircraft belongs to an aeroplane club of which both the instructor and the said other person are members), the licence so held by the instructor is a licence to fly public transport or aerial work aircraft; and

(c) In a case where payment is made for the instruction the instructor is authorized by the Secretary of State, by endorsement on the licence, to give instruction in flying.

(2) For the purpose of this Article, applications to the Secretary of State for authority to give instruction in flying shall be made in such form and manner, and may be granted for such periods and on compliance with such conditions, as the Secretary of State may direct.

<sup>1</sup> Article 9A was inserted by Article 2 of the Air Navigation (Amendment) Order, 1932 (S.R. & O. 1932, No. 585). Article 8 (2) of the latter Order directs that such insertion by Article 2 shall come into operation on 1st January, 1933, but adds the following proviso—

"Provided that, notwithstanding anything in this Article, directions may be issued by the Secretary of State for the purpose of the said Article 2, and applications for authority to give instructions in flying may be made and granted in accordance with the said directions, at any time after the making of this Order."

The Secretary of State issued directions for the purpose of the said Article 2 on 2nd September, 1932. (Air Navigation Directions, 1932 (A.N.D. 11).)

(3) Nothing in this Article shall be taken to prevent the pilot of a public transport or aerial work flying machine exercising such supervision as is mentioned in paragraph 7A of Schedule V to this Order, notwithstanding that he has not been authorized as aforesaid.

#### PROHIBITION ON PERSONS UNDER SEVENTEEN HAVING SOLE CONTROL OF AIRCRAFT

9B. Notwithstanding any other provision of this Order, it shall not be lawful—

- (a) For a person under the age of seventeen years to have sole control of an aircraft in motion; or
- (b) For any person to cause or permit a person apparently under the age of seventeen years to have sole control of an aircraft in motion;

Provided that, in any prosecution for a contravention of paragraph (b) of this Article, it shall be a defence to prove that the person apparently under the age of seventeen years was at the time of the alleged contravention actually of or over that age.

#### FLIGHTS IN CONTRAVENTION OF ORDER

10. Where it appears to any person authorized in writing by the Secretary of State for the purposes of this article that any aircraft is intended or likely to be flown in such circumstances that the flight would be in contravention of any of the provisions of sub-paragraphs (i), (ii), and (iii) of paragraph (1) of article 3, or sub-paragraph (i) of paragraph (1) of article 4, or article 18 of this Order, or in such circumstances as to infringe any other provision of this Order and to be a cause of danger to persons in the aircraft or to persons or property on the ground, the person so authorized may give such directions, and take such steps by way of detention of the aircraft or otherwise in relation thereto, as appear to him to be necessary in order to prevent the flight, and, without prejudice to any provisions of this Order with respect to the obstruction of authorized persons, any person acting in contravention of any directions given under this article shall be deemed to have acted in contravention of this Order.

#### PHOTOGRAPHY FROM AIRCRAFT

11. A person shall not take or cause or permit to be taken from an aircraft flying within Great Britain and Northern Ireland any photograph of a prohibited area, or of any part thereof, or of any object therein, except with the special permission in writing of the Secretary of State, and subject to any conditions that may be attached to such permission.

#### DRUNKENNESS OF PILOTS, ETC.

12. A person acting as, or carried in an aircraft for the purpose of acting as pilot, commander, navigator, engineer, or operative member of the crew thereof, shall not, while so acting or carried, be in a state of intoxication or in a state in which, by reason of his having taken or used any sedative narcotic or stimulant drug or preparation, his capacity so to act is impaired, and no other person while in a state of intoxication shall enter or be in any aircraft.

#### PARACHUTE DESCENTS AND DROPPING OF ARTICLES

13. A person shall not, except in a case of emergency, descend by means of a parachute from an aircraft flying within Great Britain and Northern Ireland, and no article, whether attached to a parachute or not, shall be dropped from any such aircraft, unless the descent is made or the article is dropped in accordance with and subject to any conditions or limitations contained in directions or any special permission in writing given by the Secretary of State:

Provided that nothing in this Article shall be taken to prevent the dropping of ballast which is not prohibited by paragraph 35 of Schedule IV to this Order.

(*See A.N.D. II, Sect. XVI*)

and if any article other than as aforesaid drops or falls from an aircraft a contravention of this Order shall be deemed to have been committed.

#### PERSONNEL TO BE CARRIED BY BRITISH AIRCRAFT

13A.—(1) The Secretary of State may by directions prescribe the number and description of the personnel to be carried, either in all circumstances or in certain circumstances specified in the directions, by any class or description of British aircraft registered in Great Britain and Northern Ireland:

Provided that in any case where the Convention requires that an aircraft shall carry a certain number of persons of a certain description, the number of persons of that description prescribed in that case shall not be less than the number required by the Convention.

(*See A.N.D. II, Sect. XI*)

#### INSTRUMENTS TO BE CARRIED

14. There shall be carried and maintained in working order in every British aircraft registered in Great Britain and Northern Ireland, when flying, such instruments and equipment applicable to the class or description of the aircraft as may be prescribed, and any directions of the Secretary of State as to the manner in which, and the persons by whom any particular instruments or equipment are to be used shall be complied with as if they were contained in this Order.

(*See A.N.D. II, Sect. VIII, also Sect. II (D)*)

#### WIRELESS TELEGRAPHY

14A.—(1) The Secretary of State may give directions prescribing the conditions in which British aircraft registered in Great Britain and Northern Ireland shall, when flying,

- (i) Carry wireless telegraphy apparatus; and
- (ii) Carry certified operators; and
- (iii) Maintain wireless telegraphy service;

and such directions may prescribe the character of the apparatus, the number and qualifications of the operators and the nature of the service, and when any such directions have been given they shall be complied with in the case of any aircraft to which they apply as if contained in this Order.

(2) In this Article the expression "certified operator" means an operator who is the holder of a certificate of proficiency in radio-telegraphy granted by the Postmaster-General.

(3) Nothing in this Article shall exempt any person from the requirements of the Wireless Telegraphy Act, 1904, as to the issue of licences by the Postmaster-General.

(*See A.N.D. II, Sect. IX*)

#### DOCUMENTS TO BE CARRIED

15.—(1) Save as hereinbefore expressly provided, every British aircraft registered in Great Britain and Northern Ireland shall carry the following documents when flying—

- (a) Its certificate of registration;
- (b) Its certificate of airworthiness, and any other certificate relating to the aircraft, which may be required by this Order;
- (c) The certificates of competency and licences of its personnel;
- (d) The journey log book;
- (e) Any licence to use wireless apparatus in the aircraft which may have been issued by the Postmaster-General.

(2) Every such aircraft engaged in international navigation shall, in addition, carry the following documents—

- (a) If it carries passengers, a list of their names;
- (b) If it carries freight, bills of lading and manifest in respect thereof.

#### CERTIFICATE OF AIRWORTHINESS

16. The certificate of airworthiness of aircraft of a Contracting State, shall be kept at all times in the pocket of the journey log book.

#### DOCUMENTS FOR INSPECTION

17.—(1) Any person required under this Order to be provided with a licence shall on demand produce his licence, and, in the case of a pilot, his pilot's log book for the inspection of any person authorized for the purpose by the Secretary of State or of any police constable.

(2) The owner, hirer, and person in charge of any aircraft shall on demand produce or cause to be produced, for the inspection of any person authorized for the purpose by the Secretary of State or of any police constable, any certificates, licences or log books relating to the aircraft, and, in the case of an aircraft engaged in international navigation if it carries passengers or freight, the list of names and the bills of lading and manifest respectively.

#### PROHIBITED CARRIAGE

18. Save for the purposes of the provisions of Schedule IV to this Order as to signals—

(i) An aircraft engaged in international navigation shall not carry explosives of war, arms of war, or munitions of war;

(ii) A foreign aircraft shall not carry explosives of war, arms of war, or munitions of war between any two points within British territory, either or both of which is within Great Britain or Northern Ireland.

#### AERIAL LIGHTHOUSES

19.—(1) An aerial lighthouse shall not be established or maintained within Great Britain and Northern Ireland, nor the character of the light exhibited therefrom altered, except with the approval of the Secretary of State, and subject to such conditions as he may prescribe:

Provided that, in the case of an aerial lighthouse the light from which would or might be visible from the sea or from any waters over which a general lighthouse authority exercises jurisdiction, such approval shall not be given except with the consent of the general lighthouse authority.

(2) A person shall not wilfully or negligently injure or interfere with any aerial lighthouse established or maintained with the approval of the Secretary of State or any light exhibited from any such lighthouse.

#### FALSE LIGHTS

20.—(1) Whenever in Great Britain and Northern Ireland any light is exhibited,

(a) In the neighbourhood of an aerodrome or an aerial lighthouse so as to be liable to be mistaken for a light proceeding from an aerial lighthouse or for a prescribed light at an aerodrome; or

(b) Which by reason of its liability of being mistaken for a light proceeding from an aerial lighthouse or for a prescribed light at an aerodrome, is calculated to endanger the safety of aircraft;

(c) Which, being in the neighbourhood of an aerodrome, is liable by reason of its glare to endanger the safety of aircraft arriving at or departing from the aerodrome;

the Secretary of State may serve a notice upon the owner of the place where the light is exhibited or upon the person having charge of the light, directing that owner or person within a reasonable time to be specified in the notice,

to take effectual means for extinguishing or for effectually screening the light and for preventing for the future the exhibition of any similar light.

(2) The notice may be served either personally or by post, or by affixing the same in some conspicuous place near to the light to which the notice relates.

(3) If any owner or person on whom a notice is served under this article fails, without reasonable cause, to comply with the directions contained in the notice, he shall be deemed to have failed to comply with this Order.

(4) If any owner or person on whom a notice under this article is served, neglects for a period of seven days to extinguish or effectually to screen the light mentioned in the notice, the Secretary of State may enter upon the place where the light is and forthwith extinguish the same, doing no unnecessary damage, and may recover the expenses incurred by him in so doing from the owner or person on whom the notice has been served.

(5) In the case of lights which would or might be visible from the sea or waters over which a general lighthouse authority exercises jurisdiction, the powers to the Secretary of State under this article shall not be exercised except with the consent of the general lighthouse authority.

#### USE OF SIGNALS, SIGNS, AND MARKS

21.—(1) In making or receiving signals by wireless telegraphy or other methods of communication, except by visual signals when the Morse Code is not being used, every aircraft possessing the nationality of a Contracting State shall use as its call sign the complete group of five letters which constitutes its nationality and registration marks preceded, in the case of a signal by radio telephony, by the name of the owner of the aircraft:

Provided that after communication has been established by means of such call sign the aircraft may employ an abridged call sign consisting—

(a) In the case of radio telegraphy, of the first and last letters of the complete call sign of five letters;

(b) In the case of radio telephony, of the whole or part of the name of the owner of the aircraft followed by the last two letters of the complete call sign of five letters.

Provided also that nothing in this paragraph shall affect the special rules as to signals laid down in Section II of the Fourth Schedule to this Order.

(2) A person in an aircraft or on an aerodrome shall not make any signal prescribed by this Order except for the purposes specified therein, and shall not knowingly make, without lawful authority or excuse (proof whereof shall lie on the accused), any naval, military or air-force signal.

(3) An aircraft other than a State aircraft shall not bear any mark or sign used or appropriated for use by State aircraft.

#### AERIAL CORRIDORS AND ARRIVAL AND DEPARTURE FROM ABROAD

22.—(1) The Secretary of State may prescribe points between which aircraft when entering Great Britain and Northern Ireland from abroad or leaving Great Britain and Northern Ireland for abroad shall pass.

(2) If such points are for the time being so prescribed, no aircraft shall enter Great Britain and Northern Ireland from abroad, or leave Great Britain and Northern Ireland for abroad, except between such points:

Provided that—

(a) If an aircraft is compelled by accident, stress of weather, or unavoidable cause, to enter Great Britain and Northern Ireland from abroad elsewhere than between such points it shall land at the Customs aerodrome in Great Britain and Northern Ireland nearest to its route; and

(b) If it is so compelled to land as aforesaid before reaching such aerodrome the procedure laid down in paragraph 21 of Schedule VIII to this Order shall be followed.

(3) Any provisions for the time being in force of the Aliens Restriction Acts, 1914 and 1919, or of any Orders made thereunder, with respect to persons

arriving in or departing from Great Britain and Northern Ireland by sea shall apply to persons arriving or departing by air as if the same were herein set out, with such modifications as are necessary for adapting them to such purpose.

#### CUSTOMS PROVISIONS

23. If the Secretary of State is satisfied that any person has, in respect of any British aircraft registered in Great Britain and Northern Ireland, been convicted by a competent court of an offence against the provisions of the Customs law of a contracting State, so far as those provisions are in accordance with Annex H of the Convention, which is set out in Schedule IX to this Order, he may (without prejudice to any other powers conferred upon him by this Order) cancel or suspend the certificate of registration of that aircraft.

#### FORGERY, ETC., OF DOCUMENTS

24.—(1) A person shall not—

(a) Forge or fraudulently alter or assist in forging or fraudulently altering, or procure to be forged or fraudulently altered, any licence or certificate required under this Order; or

(b) Make, assist in making, or procure to be made, any false representation for the purpose of procuring for himself or any other person the issue, validation, or renewal of any such licence or certificate; or

(c) Fraudulently use any such licence or certificate which has been forged, altered, cancelled, or suspended, or to which he is not entitled; or

(d) Fraudulently lend any such licence or certificate or allow it to be used by any other person.

(2) A person shall not destroy, mutilate, alter or render illegible any log book or entry made therein, or wilfully make or procure or assist in the making of any false or fraudulent entry in or omission from any log book.

#### FOREIGN MILITARY AIRCRAFT

25. A foreign military aircraft shall not fly over or land in Great Britain and Northern Ireland except on the express invitation or with the express permission of His Majesty or of a Government Department, but any aircraft so flying or landing on such invitation or with such permission shall be exempt from the provisions of this Order except to such extent as may be specified in the invitation or permission:

Provided that no such invitation or permission shall be necessary in the case of foreign military aircraft accompanying vessels of war visiting Great Britain and Northern Ireland so long as the flight or landing is necessary in connection with the arrival of the aircraft in or their departure from Great Britain and Northern Ireland, and such aircraft shall while so accompanying vessels of war as aforesaid be exempt from the provisions of this Order.

#### EXCEPTIONS TO OPERATION OF ORDER

26.—(1) Except where otherwise expressly stated, this Order applies to aircraft belonging to or employed in the service of His Majesty, other than military aircraft, but does not apply to any aircraft or to any persons if and to such extent as such aircraft or persons may be excepted from this Order by direction of the Secretary of State on the recommendation of a Government Department.

(2) The Secretary of State may, by a special and temporary authorization, and subject to such conditions as may be specified, permit the flight within the limits of Great Britain and Northern Ireland of an aircraft which does not possess the nationality of a Contracting State or of a State to which proviso (a) to paragraph (1) of Article 4 of this Order applies:

Provided that an aircraft the flight of which is so permitted as aforesaid shall while flying within the said limits carry a certificate issued either by

the Secretary of State or by the competent authority in the State whose nationality the aircraft possesses, stating that permission has been granted and the conditions, if any, subject to which it has been granted.

#### PENALTIES

27.—(1) If an aircraft flies in contravention of, or fails to comply with this Order or any provision thereof, or if in or in respect of any aircraft any act is committed which is or is deemed to be a contravention of this Order or any provision thereof, the owner or hirer of the aircraft (if other than the Crown) and the pilot or commander thereof shall be deemed to have contravened or, as the case may be, failed to comply with this Order:

Provided that—

(a) It shall be a defence to any proceedings for such contravention of, or failure to comply with this Order if the contravention or failure is proved to have been due to stress of weather or other unavoidable cause; and

(b) It shall be a defence to any proceedings under this Order against the owner, hirer, pilot or commander of an aircraft to prove that the alleged contravention took place without his actual fault or privity.

(2) If any person obstructs or impedes any person acting under the authority of the Secretary of State in the exercise of his powers and duties under this Order, such first-mentioned person shall be deemed to have acted in contravention of this Order.

(3) Every person—

(a) who is deemed to have contravened or failed to comply with this Order—

(i) by reason only of a non-compliance with condition (iv) specified in paragraph (1) of Article 3, or condition (iv) specified in paragraph (1) of Article 4, of this Order, or so much of condition (v) specified in paragraph (1) of the last mentioned Article as requires certificates of airworthiness to be carried in aircraft, or

(ii) by reason only of a contravention of, or non-compliance with, any of the following provisions of this Order, that is to say, paragraphs (2) and (3) of Article 7, Articles 15, 16 and 17, and paragraph 10 of Schedule II, or

(iii) by reason only of a failure to carry in an aircraft such a certificate as is required in relation to that aircraft by the proviso to paragraph (2) of Article 26 of this Order, or

(iv) by virtue of paragraph (4) of Article 28 of this Order, or

(b) who, being the registered owner of an aircraft, fails to comply with paragraph 3 or paragraph 4 of Schedule I to this Order, shall be liable on summary conviction to a fine not exceeding five pounds or, in the case of a second or subsequent conviction for the like offence, to a fine not exceeding ten pounds; but, save as aforesaid, every person who contravenes or fails to comply with any provision of this Order, or who is deemed to have contravened or failed to comply with this Order, shall be liable on summary conviction to imprisonment for a term not exceeding six months or to a fine not exceeding two hundred pounds or to both such imprisonment and such fine.

(4) Any aircraft which flies or attempts to fly over a prohibited area or enters Great Britain and Northern Ireland in contravention of this Order is liable to be fired on in accordance with the provisions of Schedule VII to this Order.

(5) Any proceedings in respect of contravention of or failure to comply with any of the provisions of Schedule VIII to this Order shall be deemed to be proceedings for the recovery of a penalty under the Acts relating to the Customs.

#### POWER TO CANCEL, ETC., CERTIFICATES

28.—(1) Any certificate granted under Schedule I, or any licence granted under Schedules II or V to this Order, or the licence of any aerodrome, may

be cancelled, suspended, or endorsed by the Secretary of State on sufficient ground being shown to his satisfaction, after due inquiry, and his decision shall be final; and in special cases the Secretary of State may suspend any such licence temporarily and provisionally pending the holding of an inquiry.

(2) Any certificate granted under this Order relating to the airworthiness of an aircraft may be cancelled or suspended by the Secretary of State if he is satisfied that reasonable doubt exists as to the safety of the aircraft in question or of the type to which the aircraft in question belongs, and the conditions attached to any such certificate may be varied by the Secretary of State if he is satisfied that those conditions may properly be relaxed, or that reasonable doubt exists as to whether those conditions afford a sufficient margin of safety.

(3) Where any person is convicted of any contravention of or failure to comply with this Order in respect of any aircraft, the Secretary of State may cancel or suspend any certificate of registration granted under this Order relating to that aircraft.

(3A) The Secretary of State may vary or cancel any particulars or other matter entered by him or on his authority in any licence or certificate granted, or in any journey log book issued, under this Order.

(4) The Secretary of State may require the holder of any licence, certificate, or other document granted or issued under this Order (or any person having the possession or custody of any such licence, certificate, or document) to surrender the same to him for cancellation, suspension, endorsement or variation, in accordance with the provisions of this Order; and any person failing to comply with any such requirement within a reasonable time shall be deemed to have failed to comply with this Order.

#### ACCIDENT REGULATIONS

29. Any regulations made by the Secretary of State under section 12 of the Act, for the investigation of accidents, shall, to such extent, if any, as may be specified in those regulations, apply to aircraft belonging to or exclusively employed in the service of His Majesty.

#### DIRECTIONS BY SECRETARY OF STATE

30. The Secretary of State may issue such directions as he thinks fit for the purpose of supplementing or giving full effect to the provisions of this Order, including the Schedules thereto.

#### INTERPRETATION OF TERMS

31.—(1) In this Order, unless the context otherwise requires—

“The Convention” means the Convention for determining by a common agreement certain uniform rules with respect to international air navigation signed on behalf of His Majesty in Paris on the thirteenth day of October,

“The protocol” means the additional protocol to the Convention aforesaid which was signed on behalf of His Majesty in Paris, and dated the first day of May, 1920;

“Aircraft” includes all balloons, whether fixed or free, kites, gliders, airships, and flying machines;

“Airship” means an aircraft using gas lighter than air as a means of support, and having means of propulsion and means of directional control.

“Balloon” means an aircraft, either fixed or free, using gas lighter than air as a means of support, and having no means of propulsion.

“Flying machine” includes all aeroplanes, seaplanes, flying boats, or other aircraft heavier than air and having means of propulsion;

“Glider” means an aircraft heavier than air, not fixed to the ground and having no means of mechanical propulsion, but having means of directional control;

"Military aircraft" includes naval, military, and air force aircraft; and every aircraft commanded by a person in naval, military, or air force service detailed for the purpose shall be deemed to be a military aircraft;

"State aircraft" means military aircraft and aircraft exclusively employed in State service, including postal, customs and police service;

"Passenger aircraft" and "goods aircraft" mean respectively aircraft intended for carrying passengers or goods for hire or reward, and include respectively aircraft in which passengers or goods are actually so carried;

"Public transport aircraft" means aircraft carrying passengers or goods for hire or reward or, in a case where the carriage is effected by an air transport undertaking, whether for hire or reward or not, and the expression "public transport flying machine" shall be construed accordingly;

"Aerial work aircraft" means aircraft, not being public transport aircraft, which are being used for any commercial or industrial purpose or any lucrative purpose, and the expression "aerial work flying machine" shall be construed accordingly;

"Personnel" (in relation to an aircraft) includes the pilot, commander, navigator, and engineer, and any operative member of the crew;

"Goods" includes mails;

"Wireless telegraphy" has the same meaning as in the Wireless Telegraphy Act, 1904.

"Aerodrome" means any definite and limited ground or water area intended to be used, either wholly or in part, for the landing or departure of aircraft;

"Proprietor of an aerodrome" includes any person responsible for the management thereof;

"Licensed aerodrome" means an aerodrome licensed under this Order;

"Prescribed" (except where otherwise expressly provided) means prescribed by this Order or by directions of the Secretary of State thereunder;

"Prohibited area" means any of the areas referred to in Schedule VII to this Order;

"Contracting State" means any State which is for the time being a party to the Convention;

"Secretary of State" includes, in relation to any purpose of this Order, any person authorized by the Secretary of State for that purpose, and references to a person authorized by the Secretary of State include references to the holder for the time being of any office designated by the Secretary of State;

(2) In this Order—

References to His Majesty's dominions shall be construed as though territories under His Majesty's protection, and territories in respect of which a mandate on behalf of the League of Nations has been accepted by His Majesty, formed part of His Majesty's dominions.

References to Great Britain and Northern Ireland include references to the territorial waters adjacent thereto; and

References to passengers carried for hire or reward include references to persons carried in aircraft for the purposes of instruction in flying for which payment is made:

Provided that for the purpose of determining whether a pilot is required to hold a licence to fly aircraft carrying passengers or goods for hire or reward, a member of an aeroplane club carried in an aircraft belonging to the club for the purposes of instruction or otherwise shall not, if the pilot is also a member of the same club, be deemed to be a passenger carried for hire or reward, notwithstanding that payment is made for such instruction or carriage.

(2a) In relation to the carrying of a person in an aircraft for the purpose of instruction, payment shall be deemed, for the purposes of this Order, to be made for the instruction if any sum is paid or payable in respect of the

particular flight by any person either to the instructor himself or to any person by whom the instructor is employed, or to whom he gives his services, as an instructor, or if the instructor is employed for reward to instruct persons in flying aircraft.

(3) The Interpretation Act, 1889, applies for the purpose of the interpretation of this Order as it applies for the purpose of the interpretation of an Act of Parliament, and as if this Order were an Act of Parliament.

#### PRINTING OF ORDER

32.—(1) Where by any Order in Council for the time being in force any articles or words are directed to be added to or omitted from this Order, or to be substituted for any other articles or words in this Order, then, copies of this Order printed under the authority of His Majesty's Stationery Office, after such direction takes effect, may be printed with the articles or words added or omitted or substituted for other articles or words as such direction requires and with the articles and paragraphs thereof numbered in accordance with such direction, and this Order shall be construed as if it had at the time when such direction takes effect been made with such addition, omission, or substitution.

(2) A reference in any document to this Order or to any provisions thereof shall, unless the context otherwise requires, be construed as referring to this Order as amended by any Order in Council for the time being in force.

#### SAVING

33. Nothing in this Order shall be construed as conferring any right to land in any place as against the owner of the land or other persons interested therein, or as prejudicing the rights or remedies of any person in respect of any injury to persons or property caused by an aircraft.

#### SHORT TITLE AND COMMENCEMENT

34.—(1) This Order may be cited as the Air Navigation (Consolidation) Order, 1923.

(2) This Order shall come into operation on the first day of January, 1924.

(3) Except where a contrary intention appears, this Order shall apply to the Isle of Man as if it formed part of Great Britain and were included in the expression "Great Britain," but subject to the substitution for references to the Aliens Restriction Acts, 1914 and 1919, of references to the Act of Tynwald Court called "The Aliens Restriction Act, 1922," which was approved by His Majesty in Council on the fourteenth day of July, 1922.

(4) The Air Navigation Orders, 1922 and 1923, are hereby revoked:

Provided that any certificate, licence, direction, permission, authorization, or rule, issued, given, or made under those Orders or either of them and in force at the commencement of this Order, shall until revoked or superseded, remain in force as though the same has been issued, given, or made under this Order.

## APPENDIX II

### SCHEDULES

N.B. (Amended to 1st January, 1936.)

#### SCHEDULE I

##### REGISTRATION AND MARKING AIRCRAFT

###### A. Registration (1)

1. An aircraft shall not be registered in Great Britain and Northern Ireland unless it is owned wholly either—

- (a) By British subjects or persons under His Majesty's protection; or
- (b) By a company or corporation—
  - (i) Registered and having its principal place of business in His Majesty's dominions; and
  - (ii) Whereof the chairman and at least two-thirds of the directors are British subjects or persons under His Majesty's protection:

and no aircraft shall be registered in Great Britain and Northern Ireland which is already validly registered in any other State.

2. The registration of aircraft registered in Great Britain and Northern Ireland shall be carried out by the Secretary of State, who, upon such registration, shall grant a certificate of registration and shall assign to the registered aircraft a registration mark.

The Secretary of State may in any case in which he thinks it desirable, require the applicant for a certificate of registration under this Schedule, to make and subscribe a statutory declaration as to the truth of the facts set out in the application, and the provisions of the Statutory Declarations Act, 1835, shall apply to such a declaration.

3. In the event of any change in the ownership of a registered aircraft, or if a registered aircraft ceases to be owned wholly either by persons or by a company or corporation fulfilling the conditions set out in paragraph 1 of this Schedule, then—

(1) The registered owner of the aircraft shall forthwith notify the Air Ministry of such change of ownership or, as the case may be, that the aircraft has ceased to be so owned as aforesaid; and

(2) The registration and the certificate thereof shall lapse as from the date of such change of ownership, or the date on which the aircraft ceased to be so owned.

4. When a registered aircraft has been destroyed or permanently withdrawn from use, the registered owner shall as soon as possible notify the Air Ministry accordingly, and the registration and the certificate thereof shall lapse as from the date of such notification.

###### 5. (Revoked.)

6. The register of British aircraft registered in Great Britain and Northern Ireland shall be open to inspection at such times and subject to such conditions as may be prescribed.

(1) See also A.N.D. 11, Sect. I

###### B. Marking (2)

7. The nationality mark of an aircraft registered in Great Britain and Northern Ireland shall be the capital letter G in Roman character, and the registration mark shall be a group assigned by the Secretary of State of four capital letters in Roman character.

## SCHEDULES

8. Subject as provided in paragraph 9A of this Schedule, the nationality and registration marks shall be painted on the aircraft or shall be affixed thereto by any other means ensuring a similar degree of permanence, in the following manner—

(a) *Flying Machines.* The marks shall be painted or affixed once on the lower surface of the main plane structure and once on the upper surface of the main plane structure, the top of the letters constituting the marks to be towards the leading edge. The marks shall also be painted or affixed along each side of the fuselage or body between the main planes and the tail planes.

(b) *Airships and Balloons.* In the case of airships, the marks shall be painted or affixed in three places at or near the maximum cross-section so as to appear once on each side of the airship and once on the upper surface. The letters constituting the marks on the upper surface shall be equidistant from the letters constituting the marks on the sides. In the case of spherical balloons, the marks shall be painted or affixed so as to appear in two places at or near the maximum horizontal circumference of the balloon and shall be placed as far as possible from one another, and, in the case of non-spherical balloons, shall be painted or affixed at or near the maximum cross-section on each side of the balloon immediately above the rigging band or the points of attachment of the basket suspension cables. In the case of all airships and balloons, the side marks shall be so placed as to be visible both from the sides and from the ground.

The marks shall be of such a colour in relation to the colour of the background on which they are painted or affixed as will render them clearly legible at a distance of not less than 250 yards in a clear atmosphere.

9. The height of the letters constituting the marks need not exceed eight feet unless otherwise required by the Secretary of State. Subject as aforesaid and as provided in paragraph 9A of this Schedule, the height of the letters shall be as follows—

(a) *Flying Machines.* The height of the letters on the main planes shall be equal to four-fifths of the chord. On the fuselage or on the body the height of the letters shall be equal to four-fifths of the depth of the narrowest part of that portion of the fuselage or body on which the marks are painted or affixed.

(b) *Airships and Non-spherical Balloons.* The height of the letters shall be equal to at least one-twelfth of the perimeter of the airship or balloon at its maximum cross-section.

(c) *Spherical Balloons.* The height of the letters shall be equal to at least one-fifteenth of the maximum horizontal circumference of the balloon.

9A. In cases where the constructional features of the aircraft do not admit of compliance with any of the provisions of paragraphs 8 and 9 of this Schedule, the nationality and registration marks shall be painted on or affixed to the aircraft in such manner, and the letters constituting the marks shall be of such height, as may be approved by the Secretary of State.

10. As nearly as the constructional features of the aircraft admit—

- (a) The width of the letters shall be two-thirds of their height;
- (b) The thickness of the letters shall be one-sixth of their height; and
- (c) Except as provided in paragraph 11 of this Schedule, a space equal to one-half the width of the letters shall be left between the letters.

The letters shall be painted in plain block type, and shall be uniform in shape and size.

11. A hyphen of a length equal to the width of one of the letters shall be painted between the nationality mark and the registration mark.

12. The nationality and registration marks shall be displayed to the best possible advantage, taking into consideration the constructional features of the aircraft. The marks must always be kept clean and visible.

13. Every aircraft shall carry, affixed in a prominent position to the fuselage or to the car or basket (as the case may be), a metal plate inscribed with the names and residence of the owner and the nationality and registration marks of the aircraft.

(2) *See also A.N.D. II, Sect. I*

#### SCHEDULE II

##### CERTIFICATES OF AIRWORTHINESS FOR AIRCRAFT; PERIODICAL OVERHAUL AND EXAMINATION; DETENTION OF UNAIRWORTHY AIRCRAFT

###### *General (1)*

1. A certificate of airworthiness in respect of one aircraft of any type (hereinafter referred to as "a type aircraft") may be issued by the Secretary of State in accordance with the conditions set out in this Schedule.

2. Where a certificate of airworthiness has been issued in respect of a type aircraft, the Secretary of State may issue certificates of airworthiness in respect of any other aircraft of that type if he is satisfied that such aircraft conforms in all essential respects with the type aircraft, is of satisfactory workmanship and materials, is fitted with the prescribed instruments and equipment and has carried out satisfactorily such flying trials (if any) as may be prescribed.

For the purpose of so satisfying himself, the Secretary of State may, as regards any or all of the matters in question, accept reports furnished to him—

(a) By an authorized officer of the Air Ministry; or

(b) By any person or firm whom the Secretary of State may appoint, authorize, or recognize as qualified for the purpose, upon the result of an inspection of the aircraft carried out by such person or firm, in accordance with such conditions and arrangements as may be approved by the Secretary of State:

Provided that the Secretary of State may take steps to test any inspection upon the result of which a report has been furnished to him as aforesaid (not being an inspection made by an authorized officer of the Air Ministry), and if such test inspection in his opinion warrants such a course, may order a further inspection to be carried out by any person or persons duly appointed or authorized by him and may issue or refuse a certificate as he may decide after such further inspection:

Provided also that the Secretary of State may, after the test inspection, refuse to accept for the purpose of certificates of airworthiness further reports furnished by the person or firm to whom the test inspection relates.

Where a certificate of airworthiness has been issued in respect of a type aircraft, the certificate shall have effect as a certificate of the airworthiness of the particular aircraft for such period only and subject to renewal in like manner as a certificate issued in respect of an aircraft other than a type aircraft, but save as aforesaid a certificate issued in respect of a type aircraft shall continue as a valid certificate in respect of the type until cancelled by the Secretary of State.

3. A certificate of airworthiness shall remain valid only for such period as may be prescribed therein, unless renewed by the Secretary of State for a further period. For the purpose of granting any such renewal, the Secretary of State may require to be furnished with such evidence as to the existing condition of the aircraft as he may think fit.

(1) *See also A.N.D. II, Sect. II (A)*

###### *Detention of Unairworthy Aircraft*

4. If the Secretary of State has reason to believe, on complaint or otherwise, that a passenger or goods aircraft within Great Britain and Northern Ireland is intended or is about to proceed on any flight while in a condition

unfit for flight, he may give such directions and take such steps, by way of provisional detention of the aircraft or otherwise in relation thereto, as may be necessary for the purpose of causing the aircraft to be inspected by authorized representatives of the Secretary of State, and may, upon the result of such inspection, cause the aircraft to be detained until the execution of such alterations or repairs as he may consider necessary to render the aircraft fit for flight.

*Type Aircraft (2)*

5. A certificate of airworthiness will not be issued for any type aircraft until the following conditions have been fulfilled—

- (a) The design has been approved by the Secretary of State in regard to safety;
- (b) The construction has been so approved in regard to workmanship and material used;
- (c) The aircraft is fitted with the prescribed instruments and equipment; and
- (d) A satisfactory demonstration in accordance with the directions of the Secretary of State has been made in flying trials that the aircraft is safe for the purpose for which it is intended.

For the purpose of giving such an approval or otherwise satisfying himself that any of the said conditions have been fulfilled, the Secretary of State may, as regards all or any of the matters in question, accept reports furnished to him by any person or firm whom he may authorize or recognize as qualified for the purpose.

(2) *See also A.N.D. 11, Sect. II (B, C, and E)*

*Periodical Overhaul*

6. The Secretary of State may give directions as to the inspection of aircraft with respect to which certificates of airworthiness are or have been in force, and as to the overhaul, repair and modification of such aircraft, whether such overhaul, repair, or modification involves the replacement of parts or not; and any directions so given shall be complied with as if they were contained in this Order.

7. Aircraft, in respect of which a certificate of airworthiness has been issued under this Schedule, may be inspected by authorized representatives of the Secretary of State, and the Secretary of State may cancel or suspend the certificate of airworthiness of any aircraft deemed to be unsafe as a result of such inspection.

*Examination Before Flight (1)*

8. The following provisions shall apply to British aircraft registered in Great Britain and Northern Ireland and carrying passengers or goods for hire or reward—

- (1) Any such aircraft plying for public service shall not fly unless it has within twenty-four hours been inspected and certified as safe for flight in accordance with this paragraph, nor during such twenty-four hours if in the course thereof the aircraft has landed owing to a defect which is not such as would in accordance with ordinary aeronautical practice be remedied by the pilot or crew, unless it has, after such defect has been remedied, been again inspected and certified as aforesaid:

Provided that—

- (a) If after leaving the place where it was last so certified as aforesaid, it has been accidentally delayed through some cause other than such a defect as aforesaid, it may proceed to any destination which but for the delay it would have reached within twenty-four hours since it was certified under this paragraph;

- (b) Nothing in this provision shall require the landing or re-inspection of an aircraft which is actually in flight.

(2) Any such aircraft not plying for public service shall not fly unless within the twenty-four hours next before it last left its ordinary station of operations it has been inspected and certified as safe for flight in accordance with this paragraph.

(3) An inspection under this paragraph shall be carried out by a competent person licensed for the purposes of this Schedule and shall be in accordance with directions issued by the Secretary of State, and in the case of a fixed balloon such inspection shall extend to the cable and winch by which the balloon is operated.

(4) If the result of the inspection is satisfactory a certificate under this paragraph in the prescribed form stating that the aircraft is safe for flight shall be signed in duplicate by the person who has carried out the inspection.

(5) A period of twenty-four hours for the purposes of sub-paragraphs (1) and (2) of this paragraph shall be reckoned from the time stated in the certificate as the time when the inspection was completed.

(6) For the purposes of this paragraph, an aircraft shall be deemed to be plying for public service if it is employed in a regular line or service of public air transport, or in carrying on the business of providing public pleasure flights or is otherwise carrying passengers of goods for hire or reward except under a private charter.

9. The following provisions shall apply to British aircraft registered in Great Britain and Northern Ireland—

(1) The person in charge of the aircraft shall satisfy himself before commencing any flight that—

(a) The aircraft is equipped with the prescribed instruments and equipment;

(b) The aircraft and its instruments and equipment are fit in every way for the proposed flight;

(c) The aircraft is satisfactorily loaded for safety in flight;

(d) The view of the pilot is not interfered with by any obstruction not forming part of the structure of the aircraft.

He shall also satisfy himself before commencing any flight—

(e) In the case of a flying machine or airship, that sufficient fuel, oil, and water are carried for the proposed flight;

(f) In the case of an airship or balloon, that sufficient ballast is carried for the proposed flight;

(g) In the case of an airship or balloon, that any conditions laid down in the certificate of airworthiness as to purity of gas are complied with.

(2) An aircraft, being a flying machine employed on a regular line or service of public air transport, shall not commence a flight unless the person superintending the loading of the aircraft for that flight has completed a load-sheet containing the prescribed particulars, and the said load-sheet has been submitted to and examined by the person in charge of the aircraft in order to assist him to ascertain, for the purpose of sub-paragraph (1) (c) of this paragraph, whether the aircraft is satisfactorily loaded for safety in flight.

(2a) An aircraft, being a flying machine, shall not be used to carry out any trick flying or exhibition flying while carrying passengers for hire or reward, unless the person in charge of the aircraft has satisfied himself before commencing the flight that every passenger carried in an open cockpit (whether carried for hire or reward or not) and the pilot (or pilots, if more than one) is properly secured by the prescribed safety belts.

(3) For the purposes of this Schedule, the person in charge of the aircraft on any flight shall in any case where a person other than the pilot is in command be that person, and in any other case be the pilot.

10.—(1) Of the copies of any such certificate as is mentioned in paragraph 8 of this Schedule, one copy shall, if the certificate was issued by a person in

the employment of the owner of the aircraft, be retained by the owner, and if not issued by such a person, be sent by the person in charge of the aircraft to the owner, and shall in either case be kept by the owner for six months from the date of the certificate. The duplicate copy shall be carried in the journey log book of the aircraft until a further certificate under the same paragraph is issued, and then sent by the person in charge of the aircraft to the owner to be kept by him till the expiration of the said period of six months.

(2) When any load-sheet has been examined by the person in charge of an aircraft under paragraph 9 of this Schedule, the owner of the aircraft shall cause the load-sheet to be sent to him and shall keep it for six months from the date of its completion.

(i) *See also A.N.D. II, Sect. IV*

#### *Licensing of Competent Persons (2)*

11.—(1) Licences to competent persons for the purposes of this schedule shall be granted by the Secretary of State on compliance with such conditions as he may direct.

(2) The duties to be performed by competent persons for the purpose of this Schedule may be classified under such categories as the Secretary of State may direct, and any such licence may be granted—

(a) Either in respect of all such categories or in respect of one or more of them; and

(b) Either in respect of all aircraft and engines or in respect of one or more types of aircraft or engine.

(2) *See also A.N.D. II, Sect. III*

#### *Validation of Certificates Issued Abroad*

12. When an aircraft is registered in Great Britain and Northern Ireland in respect of which a certificate of airworthiness has been granted by the duly competent authority in any other part of His Majesty's dominions or in any foreign State, and such certificate is in force at or immediately prior to the time of the registration of the aircraft in Great Britain and Northern Ireland, the Secretary of State may, subject to such conditions and limitations and for such period as he shall think fit, confer on such certificate the same validity as if it had been granted under this Order.

### SCHEDULE III

#### LOG BOOKS

##### *Log Books to be Kept (1)*

1.—(1) The following log books shall be kept in respect of British aircraft registered in Great Britain and Northern Ireland—

(a) For every aircraft a journey log book.

(b) In addition, for every passenger or goods aircraft an aircraft log book and an engine log book and where more than one engine is fitted, a separate log book for each engine.

(2) Every pilot licensed under this Order shall keep a pilot's log book.

(2a) A log book shall be kept in respect of every winch (including the cable worked thereby) used for the operation of a fixed balloon registered in Great Britain and Northern Ireland and carrying passengers for hire or reward.

(3) The log books shall be kept up to date in the prescribed form and manner.

2. The journey log book shall be issued by the Secretary of State; other log books shall be in the prescribed form.

3. The log books shall be preserved for two years after the last entry therein.

(1) *See also A.N.D. II, Sect. X*

*Instructions for Use of Log Books*

4.—(1) (a) The constructor shall fill in and sign the original entries in the aircraft and engine log books so far as he is in a position to do so.

Subsequent entries therein shall be made and signed by such persons as may from time to time be prescribed:

Provided that as regards matters which could not have come to the notice of any person so prescribed as aforesaid the pilot shall be responsible for making and signing the entries.

(b) Entries in the journey log book shall be made and signed by such persons as may from time to time be prescribed.

(2) All entries shall be made in ink:

Provided that in the case of the journey log book the entries may be entered daily from a rough note-book kept in pencil. This rough note-book shall be produced when called for in the event of any inspection or investigation.

## SCHEDULE IV

## RULES AS TO LIGHTS AND SIGNALS AND RULES FOR AIR TRAFFIC

*Section I. Interpretation*

1. For the purpose of this Schedule—

(a) An aircraft shall be deemed to be on the surface of the water when any part of the aircraft is in contact with the water.

(b) An aircraft, being in the air or on the surface of the water, shall be deemed to be under way when it is not moored to the ground or to any fixed object on the land or in the water.

(c) An aircraft under way in the air or on the surface of the water shall be deemed to be making way when it has a velocity relative to the air or water respectively.

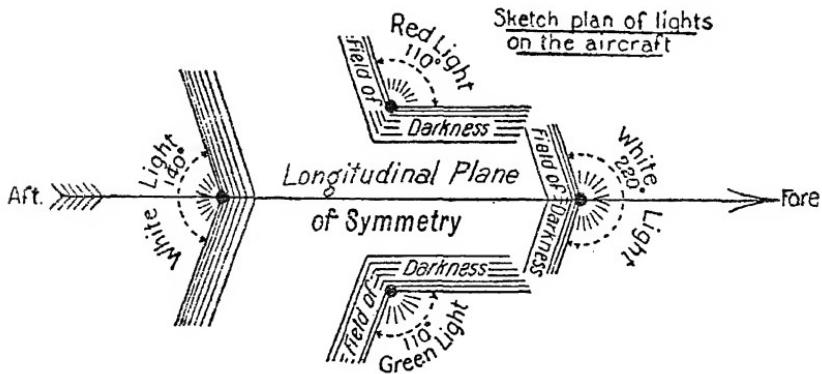
(d) An aircraft shall be deemed not to be under control when it is unable to execute a manœuvre required in respect of it by the rules laid down in this Schedule or by the Regulations for Preventing Collisions at Sea.

(e) The expression "landing area" means that part of an aerodrome which is reserved for departures and landing of aircraft.

(f) The expression "visible," when used in relation to lights, means visible on a dark night with a clear atmosphere.

(g) The expression "plane of symmetry," in relation to an aircraft, means the plane of symmetry passing through the longitudinal axis of the aircraft.

(h) The angular limits for lights laid down in the rules in Section IA of this Schedule shall be determined when the aircraft is in its normal attitude for flying on a rectilinear horizontal course, as illustrated in the following sketch plan—



## SECTION IA

RULES AS TO LIGHTS AND DAY MARKINGS  
*General*

2.—(1) The rules as to lights in this Section of this Schedule shall be complied with by aircraft in all weathers during the period from sunset to sunrise or, in the case of aircraft being on or over the territory of a State by the law of which any other period is substituted for the period aforesaid, during the period so substituted.

(2) Throughout the period during which the rules aforesaid are to be complied with, no other lights shall be displayed which may be mistaken for the lights required to be displayed by those rules.

(3) The lights required to be displayed by the said rules shall not be dazzling.

3.—(1) In the event of the failure of any light which is required by this Section of this Schedule to be displayed by aircraft in flight, the aircraft concerned shall, if the light cannot be repaired or replaced in flight, land as soon as it can do so without danger.

(2) Where, owing to the difficulty of producing lamps to meet the requirements of this Section of this Schedule as regards sector lights, an overlap of those lights is unavoidable, the overlap shall be as slight as possible; there shall be no sector in which no light is visible.

4. Nothing in this Section of this Schedule shall interfere—

(a) With the operation of any special rules made by any State with respect to the additional station or signal lights for military aircraft or for aircraft in group formation; or

(b) With the exhibition of recognition signals adopted by owners of aircraft which have been authorized by their respective Governments and published.

*Flying Machines*

5.—(1) Every flying machine in the air or on a land aerodrome shall display the following lights, that is to say—

(a) On the right side, a green light, fixed so as to show an unbroken light visible at a distance of at least 5 miles in a dihedral angle of  $110^{\circ}$  formed by two vertical planes, of which one is parallel to the plane of symmetry and directed dead ahead, and the other is directed to the right;

(b) On the left side, a red light, fixed so as to show an unbroken light visible at a distance of at least 5 miles in a dihedral angle of  $110^{\circ}$  formed by two vertical planes, of which one is parallel to the plane of symmetry and directed dead ahead, and the other is directed to the left;

(c) At the rear, a white light, fixed so as to show astern an unbroken light, visible at a distance of at least 3 miles in a dihedral angle of  $140^{\circ}$  formed by two vertical planes bisected by the plane of symmetry.

(2) In a case where, in order to comply with the foregoing provisions of this paragraph, a single light has to be replaced by several lights, the field of visibility of each of those lights shall be so limited that only one can be seen at a time.

(3) In the case of a flying machine with a maximum span of less than 65 feet, the lights required by this paragraph may be combined in one or more lamps, placed centrally, provided that the requirements of this paragraph as to colour and visibility are complied with.

6. Every flying machine under way on the surface of the water shall display lights in accordance with the following provisions of this paragraph—

(a) If it is under control and is not being towed, it shall display the lights required by paragraph 5 of this Schedule, and in addition, forward, a white light fixed so as to show forward an unbroken light visible at a distance of at least 3 miles in a dihedral angle of  $220^{\circ}$  formed by two vertical planes and bisected by the plane of symmetry;

- (b) If it is being towed, it shall display the lights required by paragraph 5 of this Schedule;
- (c) If it is not under control, it shall display two red lights placed where they can best be seen, one vertically over the other, not less than 3 feet apart, and both being visible, so far as practicable, all round the horizon at a distance of at least 2 miles, and it shall also display—
- (i) If making way, the lights required by paragraph 5 of this Schedule; or
  - (ii) If not making way, the light required by sub-paragraph (i) (c) of paragraph 5 of this Schedule.
7. Every flying machine at anchor or moored on the surface of the water shall display lights in accordance with the following provisions of this paragraph—
- (a) In every case, it shall display forward centrally where it can best be seen, a red light 3 feet vertically above a white light, both being visible all round the horizon at a distance of at least 1 mile;
  - (b) In a case where the length of the flying machine is 150 feet or upwards, it shall display, in addition to any other light required by this paragraph, a white light at or near its stern at a lower height than the lights mentioned in sub-paragraph (a) of this paragraph, and visible all round the horizon at a distance of at least 1 mile;
  - (c) In a case where the maximum span of the flying machine is 150 feet or upwards, it shall display, in addition to any other light required by this paragraph, a white light on each side placed in such a manner as to demarcate the maximum lateral dimension of the flying machine and visible, so far as practicable, all round the horizon at a distance of at least 1 mile.

#### *Gliders, Balloons, and Kites*

8. In all cases in which flying machines are required by this Section of this Schedule to display lights, a glider shall display a white light visible, so far as practicable, in all directions.
9. A free balloon shall display a white light placed not less than 15 or more than 30 feet below the basket and visible, so far as practicable, in all directions at a distance of at least 2 miles.
10. (1) In the case of a captive balloon or kite, lights shall be displayed in accordance with the following provisions of this sub-paragraph—
- (a) the balloon or kite shall display a group of two lights consisting of a white light placed 12 feet vertically above a red light, both these lights being visible so far as practicable in all directions at a distance of at least  $2\frac{1}{2}$  miles, and the white light being placed not less than 15 or more than 30 feet below the basket, or, if there is no basket, below the lowest part of the balloon or kite:
  - (b) in addition, from the mooring cable of the balloon or kite there shall be displayed, at intervals of 1,000 feet measured from the said group of two lights, similar groups of two lights, white and red, and, if the lowest group of lights is obscured by clouds, an additional group shall be displayed below the cloud base:
  - (c) in addition, the position of the object to which the balloon or kite is moored on the ground shall be marked by a similar group of two lights, white and red.
- (2) By day, the mooring cable of a captive balloon shall have attached to it at intervals of not more than 300 feet measured from the basket (or, if there is no basket, from the lowest part of the balloon) tubular streamers, not less than 8 inches in diameter and 6 feet in length, and marked with alternate bands of white and red 18 inches in width.

(3) By day, the mooring cable of a kite shall be marked, either

(a) In the manner required by the last preceding sub-paragraph in the case of a captive balloon; or

(b) By streamers of stout paper attached to the cable at intervals of 150 feet measured from the lowest part of the kite, being streamers not less than 30 inches in length or one foot in width in their widest part and marked with alternate bands of white and red 4 inches wide.

#### *Airships*

11.—(1) Except as provided in the next following paragraph an airship when under way shall display the following lights—

(a) Forward, a white light fixed so as to show forward an unbroken light visible at a distance of at least 5 miles in a dihedral angle of 220° formed by two vertical planes and bisected by the plane of symmetry.

(b) On the right side, a green light fixed so as to show an unbroken light visible at a distance of at least 5 miles in a dihedral angle of 110° formed by two vertical planes, of which one is parallel to the plane of symmetry and directed dead ahead, and the other is directed to the right.

(c) On the left side, a red light fixed so as to show an unbroken light visible at a distance of at least 5 miles in a dihedral angle of 110° formed by two vertical planes, of which one is parallel to the plane of symmetry and directed dead ahead, and the other is directed to the left.

(d) At the rear, a white light fixed so as to show astern an unbroken light visible at a distance of at least 3 miles in a dihedral angle of 140° formed by two vertical planes and bisected by the plane of symmetry.

(2) In a case where, in order to comply with the foregoing provisions of this paragraph, a single light has to be replaced by several lights, the field of visibility of each of those lights shall be so limited that only one can be seen at a time.

12.—(1) An airship which is under way and which is not under control, or which has voluntarily stopped its engines, or which is being towed, shall display the following lights—

(a) The forward and rear lights required by sub-paragraphs (1) (a) and (1) (d) of the last foregoing paragraph.

(b) In addition, below the airship, two red lights, one placed vertically below the other 12 feet apart, the upper light being 25 feet below the control car, and both being visible so far as practicable in all directions at a distance of not less than 2 miles;

(c) In addition, if making way but not otherwise, the side lights required by sub-paragraphs (1) (b) and (1) (c) of the last foregoing paragraph.

(2) By day, an airship in the circumstances mentioned in sub-paragraph (1) of this paragraph shall display two black balls or shapes, each at least 2 feet in diameter, one placed vertically below the other 12 feet apart, and both being visible so far as practicable in all directions.

Where necessary in order to comply with the foregoing provisions of this sub-paragraph, the said group of two black balls or shapes may be duplicated.

13.—(1) An airship when moored to a mooring mast shall display at or near the rear a white light visible, so far as practicable, in all directions at a distance of at least 3 miles.

(2) An airship, when moored to the ground or the surface of the water by a cable, shall display, forward, the white light required by sub-paragraph (1) (a) of paragraph 11 of this Schedule, and at the rear, the white light required by sub-paragraph (1) (d) of that paragraph, and in addition the airship and its mooring cable shall be lighted or marked in accordance with such of the provisions of paragraph 10 of this Schedule as are applicable in the case of a captive balloon.

(3) An airship while picking up its moorings shall be considered as being under way and not being under control until it is finally made fast.

*Section II. Rules as to Signals*

14.—(a) An aircraft wishing to land at night, without being compelled to do so, on an aerodrome having a ground control shall before landing make intermittent signals either with a lamp or a projector other than the navigation lights or with any sound apparatus. In addition it shall make by international Morse code, by means of sound or luminous signals, the two-letter group composed of the first letter and the last letter of the five-letter group constituting its nationality and registration marks.

(b) Permission to land will be given by the same two-letter sign from the ground, made with a green light and followed by intermittent signals of the same colour.

(c) Where a flying machine or glider has alighted at night on a water aerodrome having a "control," permission to proceed to the normal arrival point will be given by the same two-letter sign made with a white light and followed by intermittent signals of the same colour.

15. The firing of a red pyrotechnical light or the display of a red flare from the ground shall be taken as an instruction that aircraft are not to land.

16. An aircraft compelled to land at night shall before landing make with its navigation lights a series of short and intermittent flashes.

17. When an aircraft is threatened by grave and imminent danger and requires immediate assistance, the following shall be the signals of distress to be used or displayed, either together or separately—

(a) The international signal S O S, by means of visual or wireless signals;

(aa) The international distress call "MAY-DAY" (corresponding to the French pronunciation of the expression "m'aider") by means of radio telephony:

(b) The international code flag signal of distress, indicated by N C;

(c) The distant signal, consisting of a square flag having either above or below it a ball, or anything resembling a ball;

(d) A continuous sounding with any sound apparatus;

(e) A signal, consisting of a succession of white pyrotechnical lights fired at short intervals.

17A.—(a) Where an aircraft has a message to send stating that it is in difficulties and about to land compulsorily but does not require immediate assistance, it shall preface the call with several repetitions of the urgency signal PAN.

(b) Where the signal PAN is received from an aircraft without any message following, it shall signify that the aircraft has been compelled to land and is unable to transmit its intended message owing to the rapidity of the landing, but does not require immediate assistance.

(c) Where the signal PAN is sent by radio-telegraphy, the three letters shall be well separated so that the signals AN are not transformed into one signal P.

(d) Where the signal PAN is sent by radio-telephony, it should be pronounced like the French word 'panne.'

17B. Where an aircraft has a very urgent message to send concerning the safety of the aircraft, or of any person on board, or of any ship or aircraft or person within range of assistance, the urgency of the message shall be indicated by an urgency signal as follows—

(a) In visual signalling, by prefacing the call with a succession of green pyrotechnical lights or a succession of green flashes made with daylight signalling apparatus.

(b) In radio-telegraphy, by prefacing the call with several repetitions of the group XXX, the letters of each group and the successive groups being clearly separated from each other.

17C. None of the urgency signals referred to in the two last preceding paragraphs may be transmitted except with the authority of the commander or person responsible for the aircraft.

17D. Where an aircraft has a message to send concerning the safety of navigation or containing important information relative to meteorological warning messages, it shall first transmit the safety signal as follows—

(a) In radio-telegraphy, the safety signal consists of three repetitions of the group TTT, with the letters of each group and the successive groups well separated. This signal shall be followed by the word DE and by the call sign of the aircraft three times repeated.

(b) In radio-telephony, the safety signal consists of the French word "SÉCURITÉ" (corresponding to the English pronunciation of the syllables SAY—CURE—E—TAY), repeated three times. This signal shall be followed by the call sign of the aircraft three times repeated.

18. To warn an aircraft that it is in the vicinity of a prohibited area and should change its course, the following signals shall be used—

(a) By day: three projectiles discharged at intervals of 10 seconds, each showing, on bursting, white smoke, the location of the burst indicating the direction the aircraft should follow.

(b) By night: three projectiles discharged at intervals of 10 seconds, each showing, on bursting, white lights or stars, the location of the burst indicating the direction the aircraft should follow.

19. To require an aircraft to land, the following signals shall be used—

(a) By day: three projectiles discharged at intervals of 10 seconds, each showing on bursting, black or yellow smoke.

(b) By night: three projectiles discharged at intervals of 10 seconds, each showing on bursting green lights or stars.

In addition, when necessary to prevent the landing of aircraft other than the one ordered, a searchlight which shall be flashed intermittently shall be directed towards the aircraft whose landing is required.

20.—(a) In the event of fog or mist rendering aerodromes invisible, their presence may be indicated by a balloon acting as an aerial buoy and/or other approved means.

(b) In fog, mist, falling snow or heavy rainstorm, whether by day or night, an aircraft on the water shall make the following sound signals—

(1) If not anchored or moored, a sound at intervals of not more than two minutes, consisting of two blasts of about 5 seconds duration with an interval of about 1 second between them.

(2) If at anchor or moored, the rapid ringing of an efficient bell or gong for about five seconds at intervals of not more than one minute.

### *Section III. General Rules for Air Traffic*

21. Subject to the provisions of paragraph 43 of this Schedule, flying machines shall always give way to gliders and to balloons, fixed or free, and to airships, and airships shall always give way to gliders and to balloons, whether fixed or free.

22. An airship, when not under its own control, shall for the purpose of the provisions of this Schedule be classed as a free balloon.

23. Risk of collision can, when circumstances permit, be ascertained by carefully watching the compass bearing and angle of elevation of an approaching aircraft. If neither the bearing nor the angle of elevation appreciably change, such risk shall be deemed to exist.

24. The term "risk of collision" shall include all risk of accident due to undue proximity of other aircraft. Every aircraft that is required by these rules to give way to another to avoid collision shall keep a safe distance, having regard to the circumstances of the case.

25. While observing the rules regarding risk of collision contained in paragraph 24 of this Schedule, a mechanically-driven aircraft must always manoeuvre according to the rules contained in the following paragraphs as soon as it is apparent that, if it pursued its course, it would pass at a distance of less than 200 yards from any part of another aircraft.

26. When two mechanically-driven aircraft are meeting end on, or nearly end on, each shall alter its course to the right.

27. When two mechanically-driven aircraft are on courses which cross, the aircraft which has the other on its own right side shall keep out of the way of the other.

28. An aircraft overtaking another shall keep out of the way of the overtaken aircraft by altering its own course to the right, and must not pass by diving.

Every aircraft coming up with another aircraft from any direction more than 110 degrees from ahead of the latter, i.e. in such a position with reference to the aircraft which it is overtaking that at night it would be unable to see either of that aircraft's side lights, shall be deemed to be an overtaking aircraft, and no subsequent alteration of the bearing between the two aircraft shall make the overtaking aircraft a crossing aircraft within the meaning of these rules, or relieve it of the duty of keeping clear of the overtaken aircraft until it is finally past and clear.

As by day the overtaking aircraft cannot always know with certainty whether it is forward or abaft the direction mentioned above from the other aircraft, it should, if in doubt, assume that it is an overtaking aircraft and keep out of the way.

29. Where by any of these rules one of the two aircraft is to keep out of the way, the other shall keep its course and speed. When, in consequence of thick weather or other causes, the aircraft having the right of way finds itself so close that collision cannot be avoided by the action of the giving-way aircraft alone, it shall take such action as will best aid to avert collision.

30. Every aircraft which is directed by these rules to keep out of the way of another aircraft shall, if the circumstances of the case admit, avoid crossing ahead of the other.

31. In order to obviate the increased risk of collision which exists on air traffic routes, the following rules shall, so far as it is safe and practicable, be observed when flying on or in the vicinity of such routes:

(a) Every aircraft when flying by compass along the straight line (rhumb line) joining two points on an air traffic route in common use, shall keep such line at least 500 yards on its left.

(b) Every aircraft following an air traffic route, which has been officially recognized, shall keep such route at least 300 yards on its left.

(c) Every aircraft which, in the vicinity of a route frequented by aircraft, is following a line of land marks such as a road, railway, river, canal, or coastline, etc., shall keep such line of landmarks at least 300 yards on its left.

(d) An aircraft shall not fly keeping any of the lines or routes above referred to on its right, except at a distance therefrom sufficient to avoid aircraft following such lines or routes in accordance with these rules.

(e) When crossing one of these lines or routes above referred to, an aircraft shall cross it at right angles as rapidly as possible and as high as reasonably practicable.

(f) In the case of flights in group formation the aircraft of the leader of the group shall be responsible for leading the flight in such a manner that every aircraft in the group can comply with the above rules of this paragraph.

32. All aircraft on land or sea about to ascend shall not attempt to take off until there is no risk of collision with alighting aircraft.

33. Every aircraft in a cloud, fog, mist, or other conditions of bad visibility shall proceed with caution, having careful regard to the existing circumstances.

Every aircraft when flying beneath clouds shall always do so, so far as it is safe and practicable, at such a distance below the clouds as will enable it readily to see and be seen.

34. To facilitate compliance with the foregoing rules of this section, the pilot of a flying machine shall, save in exceptional circumstances, be placed either in the plane of symmetry of the flying machine or on the left-hand side of the plane of symmetry.

#### *Section IV. Ballast*

35. The dropping of ballast other than fine sand or water from aircraft in the air is prohibited.

#### *Section V. Special Rules for Air Traffic on and in the vicinity of Aerodromes Open to Public Use*

36. If a flying machine or glider starting from, or about to land at, an aerodrome makes a circuit or partial circuit, the turning—

(a) In the case of a land aerodrome, must be made clear of the landing area and must be left-handed (anti-clockwise) so that during the circuit the landing area shall always be on its left; and

(b) In the case of a water aerodrome, must be left-handed (anti-clockwise).

37. Subject to the provisions of any special regulations in force with respect to any particular aerodrome, a flying machine or glider shall not fly over the landing area of an aerodrome at a lower height than 6,000 feet in the case of a land aeroplane, or 2,000 feet in the case of a water aerodrome, except when departing therefrom or landing thereat.

38. Every flying machine and glider flying outside the landing area of an aerodrome at a distance of less than 3 miles from the nearest point of that area shall, unless it is flying at a greater height than 6,000 feet, in the case of a land aerodrome, or 2,000 feet in the case of a water aerodrome keep the landing area on its left.

39. Acrobatic landings are prohibited at aerodromes. Flying machines and gliders are prohibited from engaging in aerial acrobatics in the vicinity of aerodromes at a distance of less than 3 miles from the nearest point of the perimeter of the aerodrome unless they are flying at a greater height than 6,000 ft.

40.—(1) By day at every aerodrome the direction of the wind at the landing area shall be clearly indicated by a landing T, wind sleeve, smoke producing wind indicator or other recognized method.

(2) Where a landing T is used, it shall be placed so that the shaft of the T lies along the direction of the wind and the cross-arm lies across the windward end of the shaft.

(3) If there is no wind, the landing T, if used, shall be fixed in the direction in which landings are to be made.

(4) The fact that there is no wind and that the landing T is fixed as aforesaid may be indicated by a red square panel having in its centre a yellow square panel the sides of which are parallel to those of the red panel, each side measuring at least 3 feet.

(5) If the bad state of the landing area at any land aerodrome requires precautions to be observed in landing, that fact may be indicated by a red square panel partly covered by yellow triangular panels so as to show a red isosceles triangle no side of which measures less than 10 feet.

(6) If an aerodrome is temporarily closed to aircraft owing to special circumstances, that fact may be indicated by a red square panel with the diagonals thereof covered by yellow rectangular panels arranged in the form of an X.

(7) Where a red panel is used for the purpose of this paragraph—

(a) It shall be placed horizontally and as near as practicable to the landing T or wind sleeve; and

(b) Each side of the panel shall measure at least 10 feet.

41. Every flying machine and glider when taking off from or alighting on an aerodrome shall do so upwind, except when the natural conditions of the aerodrome do not permit, or in the event of there being no wind. In the latter case, every flying machine and glider, when taking off or landing, shall do so in the direction indicated by an appropriate signal, or, if there is a landing T, in the direction indicated by that T.

42. In the case of two flying machines or two gliders approaching an aerodrome for the purpose of landing, the flying machine or glider, as the case may be, flying at the greater height shall be responsible for avoiding the flying machine or glider at the lower height, and shall as regards landing observe the rules of paragraph 28 of this Schedule for passing.

43. Aircraft about to land on an aerodrome shall be given free way.

44. At every land aerodrome the following requirements shall be complied with—

(1) Along the perimeter and at the approaches to the hangars, a neutral zone shall be set apart for flying machines manoeuvring on the ground.

(2) The landing area shall be as large as possible.

(3) Every flying machine and glider when landing or taking off, shall do so in conformity with the provisions of paragraph 41 of this Schedule, and shall leave clear on its left any flying machine or glider which has already landed or which is at rest on the ground.

(4) Every flying machine and glider moving on the ground in the landing area, shall do so in the direction of landing: Provided that, on aerodromes approved by the Secretary of State for the purpose, flying machines and gliders moving on the ground may be authorized to cross the landing area subject to regulations approved by the Secretary of State.

45.—(1) By way of exception to the general rule laid down in sub-paragraph (3) of paragraph 44 of this Schedule, at land aerodromes to which this paragraph applies, the landing area may be regarded as divided into two approximately equal zones, by a vertical plane bearing in the direction of landing described in paragraph 41 of this Schedule. For an observer facing in the direction of landing, the zone on the right shall be reserved for landings, and the zone on the left for departures.

(2) The land aerodromes to which this paragraph applies shall be indicated by a full white star of five points, placed flat on the ground in the centre of the landing area. The lines joining the points of the star shall form a regular pentagon of such a size that it may be inscribed in a circle the diameter of which is not less than 15 yards.

(3) At land aerodromes to which this paragraph applies, a flying machine or glider when landing shall do so in conformity with paragraph 41 of this Schedule, in the left part of the zone reserved for that purpose, but leaving clear on its left any other flying machine or glider which has already landed, and a flying machine or glider when taking off shall do so in conformity with paragraph 41 of this Schedule, in the left part of the zone reserved for that purpose, but leaving clear on its left any other flying machines or gliders which are at rest on the ground.

45A. At every water aerodrome the following requirements shall be complied with—

(1) A flying machine or glider which has landed shall give way to a flying machine or glider landing or about to take off;

(2) Every flying machine and glider when landing or taking off shall do so in conformity with the provisions of paragraph 41 of this Schedule, leaving clear on its left any flying machine or glider which has already landed and leaving as much space as possible on its right for another flying machine or glider to land or take off;

(3) A flying machine or glider which has landed shall, before proceeding towards the normal arrival point, slow down to a speed at which it can easily be manoeuvred on the water:

Provided that if the aerodrome has a "control," a flying machine or glider which has landed at night shall come to rest and await the signal referred to in paragraph 14 (c) of this Schedule before proceeding towards the normal arrival point:

(4) In proceeding towards the normal arrival point, a flying machine or glider shall turn to the left and approach that point without crossing the landing area.

46. At every aerodrome while night landings thereat are expected, the following requirements shall be complied with—

(1) The aerodrome shall be defined as accurately as possible by red lights placed on the perimeter and on any obstacles on the aerodrome;

(2) The direction of landing shall as far as possible be indicated by a luminous T, or failing this by three white lights forming an isosceles triangle, the base of which shall be about 200 yards long, and the height of which shall be at least twice as long as the base;

(3) The white lights aforesaid shall be so placed that a flying machine will land in the direction leading from the middle of the base line to the apex of the triangle;

(4) The base line shall indicate the place where a flying machine should come into contact with the ground, and the apex shall indicate the point before reaching which it should come to rest.

46A. At every water aerodrome while night landings thereat are expected the following requirements shall be complied with—

(1) The aerodrome shall be defined and lighted in the manner most appropriate to local conditions;

(2) If possible the direction of the wind at the landing area shall be clearly indicated by one of the recognized methods.

47. No fixed balloon, kite, or moored airship shall be elevated in the vicinity of any aerodrome without a special authorization, except in the cases provided for in paragraph 20 of this Schedule.

48. Suitable signals by day and lights by night shall be placed on all obstacles on an aerodrome which are dangerous to flying by reason of their not being readily visible, and, so far as possible, on all such obstacles within 1,000 yards of an aerodrome.

48A. The Secretary of State may by directions temporarily suspend the application of all or any of the rules contained in this Section with reference to any aerodrome in Great Britain or Northern Ireland which is open to public use. Where any such directions are for the time being in force with respect to any aerodrome, there shall be placed horizontally in that aerodrome, near to the signal which indicates the direction of the wind, a red square panel, every side of which shall measure at least 10 ft. in length and shall be marked at night by red lights.

#### *Section VI. General*

49. Every aircraft manoeuvring under its own power on the water shall conform to the Regulations for Preventing Collisions at Sea, and for the purposes of these regulations shall be deemed to be a steam vessel, but shall only carry the lights specified in the preceding rules, and not those specified for steam vessels in the Regulations for Preventing Collisions at Sea, and shall not use, except as specified in paragraphs 17 and 20 of this Schedule, or be deemed to hear the sound signals specified in the above-mentioned Regulations.

50. Nothing in this Schedule shall exonerate any aircraft, or the owner, pilot, or crew thereof, from the consequences of any neglect in the use of lights or signals, or of any neglect to keep a proper lookout, or of the neglect of any precaution which may be required by the ordinary practice of the air, or by the special circumstances of the case.

50A. In conforming with the rules laid down in Section III and Section V of this Schedule—

(a) Due regard shall be had to all dangers of navigation and collision and to any special circumstances which may render a departure from those rules necessary in order to avoid immediate danger; and

(b) In particular it shall be borne in mind that steam vessels in narrow channels are not able to manoeuvre so as to avoid collision with aircraft.

51. Nothing in this Schedule shall interfere with the operation of any special rule or rules approved by the Secretary of State and published relative to navigation of aircraft in the immediate vicinity of any aerodrome or other place, and it shall be obligatory on all owners, pilots, or crews of aircraft to obey such rules.

#### SCHEDULE V LICENSING OF PERSONNEL

##### *Licences Required (1)*

1. Save as provided by Article 3 and Article 4 of this Order, every person acting as a commander, pilot, navigator, engineer, or other operative member of the crew of a British aircraft registered in Great Britain and Northern Ireland shall be the holder of a licence in respect of the capacity in which he is so acting, and in respect of the class or type of aircraft in which he is so acting, granted or rendered valid under the provisions of this Order.

In such cases as may be prescribed, the person acting as a pilot of any such aircraft as aforesaid shall, in addition to being the holder of a licence to act as pilot, also be the holder of a special certificate to be called "a master pilot's certificate": but nothing in this paragraph shall prevent a master pilot's certificate being issued to an applicant for such a certificate, notwithstanding that no such cases may have been prescribed.

(1) *See also generally as to this schedule A.N.D. 11, Sects. XII and XIII*

##### *Licensing Authority (2)*

2. Licences shall be granted by the Secretary of State.

(2) *See A.N.D. 11, Sect. XII (A)*

##### *Pilots (3)*

3. A person applying for a pilot's licence to fly aircraft other than public transport or aerial work aircraft will be required to produce such proofs of competency, medical fitness and recent reasonable flying experience as may be prescribed, or, failing such proof of recent reasonable flying experience, he may be required to undergo practical tests.

4. A person applying for a pilot's licence to fly public transport or aerial work aircraft will be required—

(a) To produce such further proofs of competency as may be prescribed; and

(b) To pass such medical examination as may be prescribed; and

(c) To submit proof of recent reasonable flying experience on the class of aircraft for which the licence is required, or failing such proof to undergo practical tests.

5. A person applying for a pilot's licence, who is qualified as a Royal Air Force pilot, shall be granted such exemptions from the requirements of the last two preceding paragraphs as the Secretary of State may direct.

5A. In order to obtain a master pilot's certificate, a person must possess such special qualifications as may be prescribed.

*Navigators (4)*

6. A person applying for a licence to navigate aircraft will be required to—  
 (a) Pass such medical examination as may be prescribed, and  
 (b) Produce such proofs of competency as may be prescribed.

(3) (4) See A.N.D. 11, Sect. XII

*Engineers*

7. A person applying for a licence as engineer in an aircraft will be required to—  
 (a) Pass such medical examination as may be prescribed, and  
 (b) Produce such proofs of competency as may be prescribed.

*Other Persons*

7A. A member of the operative crew of a public transport or aerial work flying machine of any type, who is manoeuvring the machine under the direct supervision of the pilot thereof, shall be deemed to be the holder of a licence in respect of the capacity in which he is so acting, if he holds a pilot's licence, granted or rendered valid under the provisions of this Order, to fly public transport or aerial work flying machines of that or some other type.

8. Persons applying for a licence in any other capacity than those above specified must comply with such conditions as may be directed by the Secretary of State.

*Validation of Foreign Licences*

9. When a licence has been granted by the duly competent authority in any part of His Majesty's dominions outside Great Britain and Northern Ireland or in any foreign State and is for the time being in force, the Secretary of State may, subject to such conditions and limitations and for such period as he shall think fit, confer on such licence the same validity for the purpose of flying British aircraft registered in Great Britain and Northern Ireland as if it had been granted under this Order.

*General*

10. No licence shall be granted if the Secretary of State is not satisfied that the applicant is a fit and proper person to hold the licence.

11. Holders of licences may be required from time to time to undergo further medical examinations carried out under arrangements approved by the Secretary of State.

12. A licence shall remain valid for such period as may be specified in the licence, not exceeding such period as may be prescribed by directions issued by the Secretary of State, but may be renewed from time to time.

12A. The holder of a licence who applies for the renewal thereof may be required to satisfy all or any of the requirements which are for the time being applicable on the issue of a licence of the same class.

13. In this Schedule the expression "licence" includes a certificate of competency.

## SCHEDULE VI

## FEES

## A. Registration

1. The fee chargeable on the issue of a certificate of registration of an aircraft shall be £1 1s.

Provided that, where the aircraft has been previously registered in Great Britain and Northern Ireland and the Secretary of State is satisfied—

- (a) That the certificate of registration last issued in respect of the aircraft lapsed by reason of the sale of the aircraft by the registered owner; and  
 (b) That the registered owner of the aircraft immediately before the sale was the constructor thereof or a dealer in aircraft; and  
 (c) That the aircraft has not been flown since a certificate of registration was last issued in respect thereof, except for the purpose of—  
     (i) An experiment or test carried out in the ordinary course of construction or in order to obtain a certificate of airworthiness; or  
     (ii) A demonstration to a prospective purchaser; or  
     (iii) Delivering the aircraft to a purchaser;
- the fee chargeable for the issue of the certificate shall be five shillings.

#### B. Airworthiness

2. The following fees shall be charged on the issue of a certificate of airworthiness for a type aircraft—

When the tare weight does not exceed—	<i>£</i>	<i>s.</i>	<i>d.</i>
500 lb.	25	0	0
750 ,	50	0	0
1,000 ,	60	0	0
1,500 ,	70	0	0
2,000 ,	80	0	0
3,000 ,	88	0	0
4,500 ,	100	0	0
6,000 ,	112	0	0
8,000 ,	128	0	0
12,500 „ . . . .	144	0	0
For each additional 2,500 lb.	160	0	0
	15	0	0

Where an application is made for a certificate of airworthiness for a type of aircraft and a report (other than a report by an officer of the Air Ministry) is, in pursuance of paragraph 5 of Schedule II of this Order, accepted by the Secretary of State as respects any of the matters referred to in that paragraph, the fee chargeable may be reduced to such extent, not exceeding 50 per cent, as the Secretary of State thinks fit.

Where an application is made for a certificate of airworthiness for a type aircraft which so far resembles a type aircraft in respect of which a certificate of airworthiness has already been issued by the Secretary of State as materially to reduce the work involved in carrying out the investigations, calculations, tests, and inspections necessary for the issue of the certificate which is applied for, the fee chargeable shall be reduced by such an amount as is, in the opinion of the Secretary of State, proportionate to such reduction as aforesaid.

For the purposes of this paragraph the tare weight of an aircraft shall be deemed to be—

- (a) In the case of an aircraft other than an airship or balloon, the weight empty, the radiators, when water-cooled engines are fitted, being full of water;  
 (b) In the case of an airship or balloon, the weight when deflated, the radiators, when water-cooled engines are fitted, being full of water and the ballast containers being empty.  
 3. The fee chargeable on the issue of a certificate of airworthiness for a subsequent aircraft of a type in respect of which a type certificate has been issued, and the fee chargeable for the renewal of any certificate of airworthiness, shall be £5 5s.

4. The fee chargeable for the validation of a certificate of airworthiness issued abroad shall be such a fee as in the opinion of the Secretary of State is reasonable, but shall not exceed in any case the fee which would be chargeable under paragraph 2 of this Schedule for the issue of a certificate of airworthiness for an aircraft of the same tare weight.

#### C. Aerodromes

Subject to the provisions of this paragraph, the following fees shall be chargeable in respect of licences for aerodromes, that is to say—

For licence	For official inspection of aerodrome (if required)
<i>£ s. d.</i>	<i>s. d.</i>
In respect of the grant of a licence . . .	2 0
In respect of the renewal of a licence . . .	2 0
In respect of the variation of a licence . . .	2 0

Provided that where any such licence is granted or renewed for a period which will expire within twelve months from the date on which the grant or renewal becomes operative and an application is made for the renewal of the licence, or for the grant of a further licence to the same person for the same aerodrome, for any subsequent period falling within those twelve months, then—

(a) If the application is for the renewal of the licence without variation or for the grant of a further licence on the same terms as the previous licence, no fee shall be chargeable in respect of the renewal or grant; and

(b) If the application is for the renewal of the licence with variations or for the grant of a further licence on terms different from those of the previous licence, the application shall be treated for the purpose of this paragraph as if it were an application for the variation of a licence.

#### D. Personnel

6. Subject to the provisions of this paragraph and paragraph 6B of this Schedule, the fees chargeable in respect of the grant of licences for personnel shall be in accordance with the following table—

Description of Licence	For official medical examination (if required)	For technical examination (if required)	For official flying test (if required)	For licence
	<i>£ s. d.</i>	<i>£ s. d.</i>	<i>£ s. d.</i>	<i>s. d.</i>
Navigator, first class . . .	1 1 0	5 5 0	—	5 0
Navigator, second class . . .	1 1 0	2 2 0	—	5 0
Engineer . . .	1 1 0	5 0	—	5 0
Pilot (in case of an applica- tion in respect of flying machines under paragraph 4 of Sche- dule V) . . .	3 3 0	5 0	10 0 0	5 0
Pilot (in any other case)	1 1 0	5 0	1 1 0	5 0

Provided that where an applicant for the grant of any licence described in the foregoing table has previously been medically examined in connection with the grant of any other licence under this Order for the issue of the licence for which the application is made, the fee chargeable for official medical examination of the applicant (if required) shall be 10s. 6d.

6A. Subject to the provisions of paragraph 6B of this Schedule, the fees chargeable in respect of the renewal of licences for personnel shall be in accordance with the following table—

Description of Licence	For official medical examination (if required)	For technical examination (if required)	For official flying test (if required)	For licence
Navigator, first class .	s. d. 10 6	£ s. d. 5 5 0	£ s. d. —	s. d. 5 0
Navigator, second class .	10 6	2 2 0	—	5 0
Engineer . . .	10 6	5 0	—	5 0
Pilot (in case of an application in respect of flying machines under paragraph 4 of Schedule V). . .	10 6	5 0	10 0 0	5 0
Pilot (in any other case) . . .	10 6	5 0	1 1 0	5 0

6B. Where an applicant for the grant or renewal of any licence referred to in paragraph 6 and 6A of this Schedule is not required to pass any particular part of the appropriate technical examination or official flying test by reason of his having passed that part on some previous application or for any other reason, the fee chargeable for the technical examination or official flying test, as the case may be, may be reduced by such amount as the Secretary of State may think proper in the circumstances of the case.

6C.—(a) The fees chargeable in respect of the grant of a licence to a competent person under paragraph 11 of Schedule II to this Order shall be as follows—

Where application is made for the grant of a licence in respect of one only of the categories of duties for the time being prescribed under the said paragraph 11 . . .	£ s. d. 1 1 0
Where application is made for the grant of a licence in respect of two or more of the said categories . . .	£ s. d. 1 1 0 for the first category and 10s. for each additional category.

(b) The fees chargeable in respect of the renewal of any such licence shall be as follows—

If the applicant is not required by the Secretary of State to pass an examination . . . . .	£ s. d. 10 0
If the applicant is required by the Secretary of State to pass an examination . . . . .	£ s. d. 1 1 0

(c) Where any such licence has been granted in respect of one or more of the categories prescribed as aforesaid and application is made for the extension of the licence to any additional category or categories, the application shall be treated as if it were an application for the grant of a licence, and sub-paragraph (a) of this paragraph shall apply accordingly.

(d) Where any such licence has been granted in respect of one or more types of aircraft and application is made for the extension of the licence to any additional type or types of aircraft, the fees chargeable in respect of the extension shall, subject to the provisions of sub-paragraphs (f) and (g) of this paragraph, be as follows—

	s. d.
If the applicant is not required by the Secretary of State to pass an examination . . . . .	5 0
If the applicant is required by the Secretary of State to pass an examination . . . . .	10 0

Provided that no fee shall be chargeable under this sub-paragraph if the application is made together with an application for the extension of the licence to any additional category or categories of duties prescribed as aforesaid relating to the inspection of aircraft.

(e) Where any such licence has been granted in respect of one or more types of engine and application is made for the extension of the licence to any additional type or types of engine, the fees chargeable in respect of the extension shall, subject to the provisions of sub-paragraphs (f) and (g) of this paragraph, be as follows—

	s. d.
If the applicant is not required by the Secretary of State to pass an examination . . . . .	5 0
If the applicant is required by the Secretary of State to pass an examination . . . . .	10 0

Provided that no fee shall be chargeable under this sub-paragraph if the application is made together with an application for the extension of the licence to any additional category or categories of duties prescribed as aforesaid relating to the inspection of engines.

(f) Where any such licence has been granted in respect of one or more types of aircraft and in respect of one or more types of engine, and application is made for the extension of the licence to any additional type or types of aircraft together with an application for the extension of the licence to any additional type or types of engine, then, if the applicant is not required by the Secretary of State to pass an examination in respect of either of the said extensions, the fee chargeable in respect of both extensions shall, subject to the provisions of the next following sub-paragraph, not exceed five shillings.

(g) No fee shall be chargeable under sub-paragraph (d), (e) or (f) of this paragraph if the application therein referred to is made together with an application for the renewal of the licence and the applicant is required by the Secretary of State to pass an examination in respect of the renewal.

6d. The fee chargeable for the issue of a master pilot's certificate shall be 10s.

7. The fee chargeable for the validation of a pilot's, navigator's, or engineer's licence under paragraph 9 of Schedule V of this Order shall be 5s.

7a. Where an official medical examination is required under paragraph 11 of the Fifth Schedule to this Order the fee chargeable in respect thereof shall be 10s. 6d.

#### E. General

8. A fee of 5s. shall be charged for the issue of a duplicate certificate or licence of any kind when the original is lost or destroyed.

9. An application for any certificate or licence or for the renewal of any certificate or licence shall be accompanied by a remittance to cover all the fees payable for the issue or renewal as the case may be, but when in any case

the certificate or licence is not issued or renewed, the Secretary of State may refund to the applicant such proportion of the sum paid as represents any investigation, calculation, inspection, test or examination which has not been carried out as a result of the application.

#### F. Log Books

10. The fees chargeable in respect of journey log books shall be as follows—	s. d.
For the issue of a journey Log book . . . . .	3 6
For the issue of a refill for any such log book . . . . .	2 0

### SCHEDULE VII

#### PROHIBITED AREAS

1. The places named in the following list, as described therein, shall be prohibited areas and are more particularly shown in a map issued for the purpose by the Secretary of State—

Rosyth.—An area enclosed by straight lines between the following places: Torry House ( $\frac{1}{2}$  mile North-west of Torryburn Station), Carriden House (East of Bridgeness), Dalmeny Church, Fordell House ( $1\frac{1}{2}$  miles North-east of Inverkeithing Station).

Alloa.—Two statute miles in all directions from the Throsk House (2 miles West of Alloa).

Sheerness.—One statute mile from Garrison Point from  $30^\circ$  (true) to  $190^\circ$  (true); half a statute mile from Garrison Point from  $190^\circ$  (true) through West to  $30^\circ$  (true).

Chatham.—One-and-seven-eighths statute miles in all directions from a point situated in latitude  $51^\circ 25' 07''$  North, and longitude  $0^\circ 32' 06''$  East of Greenwich, and being 200 yd. east of Hoo Common and on the Wainscott-Hoo Road.

Portsmouth.—Two statute miles from Dockyard Clock Tower from  $180^\circ$  (true) through West and North to  $130^\circ$  (true); one statute mile from Dockyard Clock Tower from  $130^\circ$  (true) to  $180^\circ$  (true).

Poole Harbour.—Three statute miles in all directions from Lytchett Minster Church.

Portland.—Two statute miles in all directions from Portland Castle.

Devonport.—Two statute miles in all directions from the Tongue at the Northern end of the North (No. 5) basin of Keyham Dockyard.

Pembroke.—Two statute miles in all directions from Wear Point.

2. Every aircraft which finds itself above a prohibited area in contravention of this Order shall, as soon as aware of the fact, give the signal of distress provided in paragraph 17 of Schedule IV, and land as soon as possible outside the prohibited area at one of the nearest aerodromes in Great Britain and Northern Ireland.

Provided that it shall not, unless compelled by stress of weather or other unavoidable cause, fly further into the prohibited area nor commence to descend while still above the prohibited area.

3. To warn an aircraft that it is in the vicinity of a prohibited area and should change its course, the signals prescribed in paragraph 18 of Schedule IV shall be used.

4. The signals which may be given when an aircraft flies, or attempts to fly, over a prohibited area in contravention of this Order shall be those prescribed in paragraph 19 of Schedule IV.

5. Upon the signals referred to in paragraph 4 of this Schedule being given, the aircraft shall immediately give the signal referred to in paragraph 2 of this Schedule, and land in accordance with that rule.

6. If any aircraft flies, or attempts to fly, over any prohibited area or enters Great Britain and Northern Ireland in contravention of this Order, and if, after signals referred to in paragraph 4 of this Schedule have been given by, or by the direction of, a commissioned officer in His Majesty's Naval, Military, or Air Forces, the aircraft fails to respond thereto by complying with the procedure laid down in paragraph 5 of this Schedule, the officer may fire at or into such aircraft, and use any and every other means necessary to compel compliance, and every and any such officer and every other person acting in his aid and by his direction shall be and is hereby indemnified and discharged from any indictment, penalty, action, or other proceeding for so doing.

7.—(1) Where it is brought to the notice of the Secretary of State—

- (a) That a large number of persons are likely to gather in any district in Great Britain and Northern Ireland for the purpose of witnessing some event of public interest; or
- (b) That it is intended to hold in any district in Great Britain and Northern Ireland an aircraft race or contest or exhibition of flying; the Secretary of State may by directions impose such temporary restrictions on the flying of aircraft within or in the neighbourhood of that district as he may consider expedient in the interest of public safety, and no aircraft shall fly in contravention of any such directions:

Provided that any such restrictions, in so far as they relate to aircraft other than State aircraft, shall apply to British aircraft and aircraft registered in any other Contracting State without distinction.

(2) Any directions issued under this paragraph shall specify the area or areas to which the restrictions extend and the time or times during which the restrictions are to be in force, and, in the case of restrictions applying only to aircraft of or other than, any particular class or description, the class or description of aircraft to which the restrictions apply, or do not apply, as the case may be.

(3) Any area specified in any such directions shall, during the specified time or times, be deemed to be a prohibited area for the purposes of paragraphs 2, 3, 4, and 5 of this Schedule, but not for the purposes of any other provisions of this Order.

### SCHEDULE VIII

#### CUSTOMS RULES AS TO AIRCRAFT ARRIVING IN OR DEPARTING FROM GREAT BRITAIN AND NORTHERN IRELAND

##### *Preliminary*

1. For purposes of this Schedule—

“Importer” has the same meaning as in the Customs Consolidation Act, 1876;

“Commissioners” means Commissioners of Customs and Excise;

“Examination station” means a space at a Customs aerodrome approved by the Commissioners as an examination station;

“Pilot” includes person in charge.

Other expressions have the same meaning as in the general provisions of this Order.

##### *Customs Aerodromes*

2. The Secretary of State may, subject to the concurrence of the Commissioners and to such conditions as to security and otherwise as he thinks fit, by directions approve aerodromes as “Customs Aerodromes” for purposes of the Acts relating to Customs, and remove aerodromes from the list of Customs Aerodromes.

*Arrival at and Departure from Customs Aerodromes*

3. An aircraft entering Great Britain and Northern Ireland from abroad shall not land in Great Britain and Northern Ireland for the first time in any journey except at a Customs aerodrome.

Provided that this paragraph shall not apply where an aircraft is compelled to land before arriving at a Customs aerodrome, owing to accident, stress of weather, or unavoidable cause, in which event the procedure laid down in paragraph 21 of this Schedule shall be followed.

5.—(i) No person in any aircraft entering Great Britain and Northern Ireland shall carry or allow to be carried in the aircraft any goods the importation of which is prohibited by the laws relating to Customs;

(ii) No person in any aircraft entering Great Britain and Northern Ireland shall break or alter any seal placed upon any part of the aircraft or upon any goods therein by a Revenue officer at the aerodrome from which he departed for Great Britain and Northern Ireland.

6. An aircraft shall not enter or leave Great Britain and Northern Ireland, having any secret or disguised place adapted for concealing goods.

*Arrival at Customs Aerodromes from Foreign*

7. The pilot of an aircraft arriving at a Customs aerodrome from a place outside Great Britain and Northern Ireland shall, on landing, forthwith take his aircraft to the examination station at that aerodrome:

Provided that a pilot shall not be deemed to have contravened or failed to comply with this rule if he proves that circumstances over which he had no control prevented him from taking his aircraft to the examination station, and that, after the report required by paragraph 8 of this Schedule had been duly made by him, all goods carried in the said aircraft were removed to the examination station in the presence of an officer of Customs and Excise.

8. Within twenty-four hours after the landing at any Customs aerodrome of an aircraft from a place outside Great Britain and Northern Ireland the pilot shall—

(a) Make a report to the proper officer of Customs and Excise in the form prescribed by the Commissioners; and

(b) Truly furnish the several particulars required by such form; and

(c) Deliver to such officer with such report his journey log book, manifest and declaration of the goods on board his aircraft signed by the proper Revenue officer at the aerodrome from which he departed for Great Britain and Northern Ireland; and

(d) Land at such aerodrome for examination of baggage all passengers carried in such aircraft, and, after making such reports, shall produce, and, if required to do so, shall land all goods in such aircraft for examination.

*Arrival at Customs Aerodromes from Aerodromes in Great Britain and Northern Ireland*

9. If at any aerodrome or other place within Great Britain and Northern Ireland goods or passengers are loaded for conveyance by air to a Customs aerodrome, the pilot shall obtain from the proprietor of the aerodrome of departure a certificate of departure in the form prescribed by the Secretary of State and the Commissioners, and on arriving at the Customs aerodrome shall produce such certificate to the proper officer of Customs and Excise.

*Departure for Foreign from Customs Aerodromes*

10. The pilot of every aircraft in which goods are to be exported shall, before any goods are taken on board, deliver to the proper officer of Customs and Excise a notice of departure for a foreign destination in the form prescribed by the Commissioners, in which shall be truly stated the particulars required by such form.

11.—(1) An aircraft shall not start on a voyage to a place outside Great Britain and Northern Ireland from any place therein other than a Customs aerodrome.

(2) An aircraft shall not, in the course of such a voyage as aforesaid, land at any place in Great Britain and Northern Ireland other than a Customs aerodrome specified in the application for clearance as hereinafter provided, unless compelled so to do owing to accident, stress of weather or unavoidable cause.

(3) An aircraft shall not leave any Customs aerodrome from which it is about to start on such a voyage or at which it has landed in the course of such a voyage, unless the pilot of the aircraft has obtained clearance and authority for the aircraft to proceed from that aerodrome.

(4) The pilot of every aircraft starting on such a voyage shall deliver to the proper officer of Customs and Excise at the Customs aerodrome from which the aircraft is about to start the journey log book belonging to the aircraft and also the following documents in duplicate, namely—

(a) An application for clearance in the form prescribed by the Commissioners, specifying the Customs aerodromes (if any) at which it is intended that the aircraft shall land in the course of the voyage; and

(b) A manifest and declaration in the form prescribed by the Commissioners declaring what goods and stores (if any) are on board the aircraft; and the said documents, when signed by the said officer, shall be the clearance and authority for the aircraft to proceed from that aerodrome.

(5) If an aircraft in the course of such a voyage lands at a Customs aerodrome, the pilot of the aircraft shall, before the aircraft leaves that aerodrome, deliver to the proper officer of Customs and Excise at that aerodrome—

(a) The journey log book belonging to the aircraft;

(b) The clearance and authority for the aircraft to proceed from the Customs aerodrome which the aircraft last left; and

(c) A manifest and declaration in duplicate in the form prescribed by the Commissioners declaring what goods and stores (if any) have been loaded on board the aircraft at the aerodrome at which it has so landed; and the said manifest and declaration when signed by the said officer, together with the said clearance and authority when counter-signed by the said officer, shall be the clearance and authority for the aircraft to proceed from the aerodrome at which it has so landed.

(6) A pilot shall truly state in every manifest, declaration, and application for clearance, which is delivered by him in accordance with this paragraph to the proper officer of Customs and Excise, the particulars required by the forms respectively prescribed by the Commissioners.

#### *Importation, Entry, and Unloading of Goods*

12. A person importing goods in an aircraft shall not bring the goods into any place in Great Britain and Northern Ireland other than a Customs aerodrome, or unload the goods from any aircraft except at an examination station (unless such goods are unloaded in the presence of an officer of Customs and Excise under the provisions of paragraph 7 of this Schedule), and shall not unload the goods except between such hours as the Commissioners prescribe, or remove the goods from an examination station unless the goods have first been duly entered in manner provided by these rules and produced to the proper officer of Customs and Excise and duly cleared by him.

13. A person shall not remove from any aircraft any goods imported therein until the report required by paragraph 8 of this Schedule has been made, and the authority of the proper officer of Customs and Excise has been obtained.

14. The importer of any goods imported in aircraft shall deliver to the Collector of Customs and Excise in whose district the aerodrome of importation is situated an entry of such goods in accordance with the provisions of

the Acts relating to Customs, and shall truly furnish thereon the several particulars required by the form of entry, and shall pay to the proper Collector of Customs and Excise all duties chargeable thereon at the times and in the manner prescribed by the said Acts:

Provided that no entry shall be required in respect of the baggage of passengers.

15. All goods imported into a Customs aerodrome in any aircraft shall be duly entered and unladen within seven days from the time of the arrival of such aircraft at the aerodrome or within such further period as the Commissioners may allow.

16. All goods imported in aircraft which have not been examined and cleared by the proper Officer of Customs and Excise shall be stored in a transit shed at the Customs aerodrome, and no person shall remove such goods from the transit shed before examination and clearance by such officer.

#### *Exportation of Goods*

17.—(1) The exporter of any goods intended for exportation in aircraft shall deliver to the proper Officer of Customs and Excise at the Customs aerodrome from which such aircraft is cleared to its foreign destination, an entry in the form prescribed by the Commissioners, and shall truly state in such form the particulars thereby required; and such form when signed by the proper Officer of Customs and Excise shall be the clearance and authority for the exportation of such goods.

(2) A person shall not export goods in such aircraft until such authority has been given by the proper Officer of Customs and Excise.

18. A person shall not without the consent of the proper Officer of Customs and Excise unload from any aircraft any goods loaded therein for exportation which have been cleared under paragraph 17 of this Schedule, or open, alter or break any lock, mark or seal placed by any Officer of Customs and Excise on any goods in any aircraft about to depart from Great Britain and Northern Ireland.

#### *General Provisions*

19. If any Officer of Customs and Excise in the execution of his duty boards any aircraft in any place, the pilot thereof shall not convey him in the aircraft away from such place without his consent.

20. Dutiable goods shall not be removed in aircraft from the Isle of Man to any part of Great Britain and Northern Ireland except from a Customs aerodrome and with the consent of the proper Officer of Customs and Excise, and shall not be landed except at a Customs aerodrome; and dutiable goods removed under bond or on drawback to the Isle of Man from any part of Great Britain and Northern Ireland shall be produced to the proper Officer of Customs and Excise in the Isle of Man.

21. If any aircraft arriving from a place outside Great Britain and Northern Ireland shall land in any place other than a Customs aerodrome, the pilot shall forthwith report to an Officer of Customs and Excise or police constable, and shall on demand produce to such Officer or police constable the journey log book belonging to the aircraft, and shall not allow any goods to be unloaded therefrom without the consent of an Officer of Customs and Excise, and no passenger thereof shall leave the immediate vicinity without the consent of an Officer of Customs and Excise or police constable.

22.—(1) The proprietor of any aerodrome shall at all times permit any Officer of Customs and Excise to enter and inspect his aerodrome and all buildings and goods thereon.

(2) The pilot of any aircraft shall permit any Officer of Customs and Excise at any time to board and inspect his aircraft, and any goods laden therein, and every such Officer shall have the right of access at any time to any place to which access is necessary for the purpose of such inspection.

(3) The importer or exporter of any goods imported or exported in an aircraft shall produce such goods to the proper officer of Customs and Excise at the Customs aerodrome of importation or exportation, as the case may be, and permit him to inspect such goods.

23. The provisions of the Acts relating to Customs, other than those relating to coasting trade, shall, so far as they are applicable, and except as they are modified by this Schedule, apply to aircraft and to goods, mails and persons carried in or landed from them as they apply to ships and to goods, mails, and persons carried in or landed from ships, except the following sections—

Sections 14, 50, 52, 100, 101, 126 to 129, 134, 136, 175, 179, 181, and 282 of the Customs Consolidation Act, 1876.

Section 6 of the Customs and Inland Revenue Act, 1878.

Sections 5 and 6 of the Revenue Act, 1883.

Sections 2 (1) and 3 of the Revenue Act, 1884.

Sections 1 to 4 of the Customs Consolidation Act, 1876, Amendment Act, 1890.

Section 2 of the Revenue Act, 1898.

The Commissioners may modify the form of any document prescribed by the Acts relating to Customs, so as to make such form applicable to aircraft or to goods carried therein.

#### SCHEDULE IX

*(Annex H of the Convention)*

##### CUSTOMS

###### *General Provisions*

###### I

Any aircraft going abroad shall depart only from aerodromes specially designated by the customs administration of each contracting State, and named "customs aerodromes."

Aircraft coming from abroad shall land only in such aerodromes.

###### 2

Every aircraft which passes from one State into another is obliged to cross the frontier between certain points fixed by the contracting States. These points are shown on the aeronautical maps.

###### 3

All necessary information concerning customs aerodromes within a State, including any alterations made to the list and any corresponding alterations necessary on the aeronautical maps and the dates when such alterations become valid, and all other information concerning any international aerodromes which may be established, shall be communicated by the State concerned to the International Commission for Air Navigation, which shall notify such information to all of the contracting States. The contracting States may agree to establish international aerodromes at which there may be joint customs services for two or more States.

###### 4

When, by reason of a case of *force majeure*, which must be duly justified, an aircraft crosses the frontier at any other point than those designated, it shall land at the nearest customs aerodrome on its route. If it is forced to land before reaching this aerodrome it shall inform the nearest police or customs authorities.

It will only be permitted to leave again with the authorization of these authorities, who shall, after verification, stamp the log book and the manifest provided for in paragraph 5: they shall inform the pilot of the customs aerodrome where he must necessarily carry out the formalities of customs clearance.

## SCHEDULES

Before departure, or immediately after arrival, according to whether they are going to or coming back from a foreign country, pilots shall show their log books to the authorities of the aerodrome and, if necessary, the manifest of the goods and supplies for the journey which they carry.

The manifest is to be kept in conformity with the attached form No. 1.

The goods must be the subject of detailed declarations in conformity with the attached form No. 2, made out by the senders.

Every contracting State has the right to prescribe for the insertion either on the manifest or on the customs declaration of such supplementary entries as it may deem necessary.

In the case of an aircraft transporting goods, the customs officer, before departure, shall examine the manifest and declarations, make the prescribed verifications, and sign the log book as well as the manifest. He shall verify his signature with a stamp. He shall seal the goods or sets of goods, for which such a formality is required.

On arrival, the customs officer shall ensure that the seal is unbroken, shall pass the goods, shall sign the log book and keep the manifest.

In the case of an aircraft with no goods on board, the log book only shall be signed by the police and customs officials.

The fuel on board shall not be liable to customs duties provided the quantity thereof does not exceed that needed for the journey as defined in the log book.

### 8

As an exception to the general regulations, certain classes of aircraft, particularly postal aircraft, aircraft belonging to aerial transport companies regularly constituted and authorized and those belonging to members of recognized touring societies not engaged in the public conveyance of persons or goods, may be freed from the obligation of landing at a customs aerodrome and authorized to begin or end their journey at certain inland aerodromes appointed by the customs and police administration of each State at which customs formalities shall be complied with.

However, such aircraft shall follow the normal air-route, and make their identity known by signals agreed upon as they fly across the frontier.

### *Regulations Applicable to Aircraft and Goods*

Aircraft landing in foreign countries are in principle liable to customs duties if such exist.

If they are to be re-exported, they shall have the benefit of the regulations as to permit by bond or deposit of the taxes.

In the case of the formation, between two or more countries of the Union, of touring societies, the aircraft of the said countries will have the benefit of the regulations of the "Triptyque."

Goods arriving by aircraft shall be considered as coming from the country where the log book and manifest have been signed by the customs officer.

As regards their origin and the different customs régimes, they are liable to the regulations of the same kind as are applicable to goods imported by land or sea.

With regard to goods exported in discharge of a temporary receiving or bonded account or liable to inland taxes, the senders shall prove their right to send the goods abroad by producing a certificate from the customs of the place of destination.

*Air Transit*

12

When an aircraft to reach its destination must fly over one or more contracting States, without prejudice to the right of sovereignty of each of the contracting States, two cases must be distinguished—

1. If the aircraft neither sets down nor takes up passengers or goods, it is bound only to keep to the normal air route and make itself known by signals when passing over the points designated for such purpose.

2. In other cases, it shall be bound to land at a customs aerodrome and the name of such aerodrome shall be entered in the log book before departure. On landing, the customs authorities shall examine the papers and the cargo, and take, if need be, the necessary steps to ensure the re-exportation of the craft and goods or the payment of the dues.

The provisions of paragraph 9 (2) are applicable to goods to be re-exported.

If the aircraft sets down or takes up goods, the customs officer shall verify the fact on the manifest, duly completed, and shall affix, if necessary, a new seal.

*Various Provisions*

13

Every aircraft during flight, wherever it may be, must conform to the orders from police or customs stations and police or customs aircraft of the State over which it is flying.

14

Customs officers and excise officials, and, generally speaking, the representatives of the public authorities shall have free access to all starting and landing places for aircraft; they may also search any aircraft and its cargo to exercise their rights of supervision.

15

Except in the case of postal aircraft, all unloading or throwing out in the course of flight, except of ballast, may be prohibited.

16

In addition to any penalties which may be imposed by local law for infringement of the preceding regulations, such infringement shall be reported to the State in which the aircraft is registered, and that State shall suspend for a limited time, or permanently, the certificate of registration of the offending aircraft.

17

The provisions of this Annex do not apply to military aircraft visiting a State by special authorization (Articles 30, 31, and 32 of the Convention), nor to police and customs aircraft (Articles 30 and 33 of the Convention).

NOTE.—The manifest should not bear on it erasures or corrections except those approved by the proper customs officials, nor contain interlineations or several articles entered on the same line. As many extra sheets may be added as are necessary.

MODEL NO. I.

## AIR NAVIGATION

### MANIFEST

#### OR GENERAL DECLARATION OF CARGO

Machine . . . . Registration Mark

Space re-served for entries by Customs Officers.
--

Commanding Officer      Name:  
                            Residence:  
                            Nationality:  
                            Number of Licence:  
  
Goods      Place of departure:      Country:  
                            Place of destination:      Country:  
                            Number of annexed declarations:

The Commanding Officer guarantees the accuracy of the contents of this manifest under penalties provided by law. Consequently he has dated and signed this document immediately below the last entry.

File Number of Document	Marks and Numbers on the Parcels	Number (in Figures and Letters) and Descriptions of Parcels	Nature of the Goods	Weight	Observations

AIR NAVIGATION

742

Place of Departure:

**Place of Destination:**

*Customs declaration made by M  
for the following goods—*

ε6

At the day of 19  
*Consignor.*

# APPENDIX III

## THE AIR NAVIGATION DIRECTIONS, 1932 (A.N.D. II)

(Issued by the Secretary of State for Air under Art. 30 of the Air Navigation (Consolidation) Order, 1923)

N.B. (*Amended to 1st January, 1936.*)

THESE Directions are issued under Article 30 of the Air Navigation (Consolidation) Order, 1923 (which Order, as amended by subsequent Orders, is hereinafter referred to as "the Order"), which provides that the Secretary of State may issue such directions as he thinks fit for the purpose of supplementing or giving full effect to the provisions of the Order, including the Schedules thereto.

### SECTION I. REGISTRATION OF AIRCRAFT

1. With reference to Article 3 (1) (i) of the Order and Schedule I thereto, applications for the registration of aircraft in Great Britain and Northern Ireland should be made to the Secretary (D.C.A.), Air Ministry, London, W.C.2, by whom application forms will be supplied on request.

### SECTION II. CERTIFICATES OF AIRWORTHINESS

#### A. General

2. With reference to Article 3 (1) (ii) of the Order and Schedule II thereto, applications for certificates of airworthiness should be made to the Secretary (D.C.A.), Air Ministry, London, W.C.2, by whom application forms will be supplied on request.

3. In this Section, unless the context otherwise implies, the terms "aircraft," "flying machine," "airship" and "balloon" include respectively the aircraft, flying machine, airship or balloon and all equipment.

4. *Type Design.* A design of aircraft which is of a new type, or which, in the opinion of the Secretary of State, differs in essential particulars affecting the safety of the aircraft from previously approved designs, will be classified as a type design.

5. *Type Aircraft.* The first aircraft constructed in accordance with a type design, in respect of which an application is made for a certificate of airworthiness, will be classified as a type aircraft.

6. *Subsequent Aircraft.* An aircraft which, in the opinion of the Secretary of State, conforms in all essential respects affecting the safety of the aircraft with a type aircraft in respect of which a certificate of airworthiness has been issued by the Secretary of State, will be classified as a "subsequent aircraft."

#### B. Approval of Design

7. To obtain approval of design, there are two alternative methods of procedure, viz.—

Method I. Applicable to type aircraft designed by persons or firms recognized by the Secretary of State as persons or firms from whom he is prepared to accept reports under paragraph 5 of Schedule II of the Order in respect of the design of type aircraft of the kind in question.

Method II. Applicable to type aircraft designed by persons or firms not so recognized.

#### METHOD I

8. An application for a certificate of airworthiness should be made at a very early stage in the design of the aircraft. Until such an application has been received, action by the representatives of the Secretary of State as regards the design of the aircraft will not be authorized.

9. During the course of the design of the aircraft all design data, calculations, reports on tests, and drawings shall be held at the disposal of the representatives of the Secretary of State for examination, as also shall be the aircraft during its construction.

10. If, in the opinion of the Secretary of State, the aircraft is one to which the assumptions usually made, or the methods usually employed, for the purpose of checking in detail the safety of aircraft are not strictly applicable, then—

(a) The Secretary of State may require the designer to provide satisfactory evidence, based on wind channel tests or otherwise, as to the distribution of loads on the components of the aircraft.

(b) If, in the opinion of the Secretary of State, strength tests are necessary to demonstrate that the aircraft complies with specified strength standards, the designer will be required to carry out such tests as may be prescribed by the Secretary of State.

11. At any time prior to the issue of the certificate of airworthiness, the constructor may be required to make any modifications to the aircraft which are considered by the Secretary of State to be necessary for safety. Before, however, such modifications are carried out, full drawings and particulars thereof must be placed at the disposal of the representatives of the Secretary of State for examination.

12. After completion of the aircraft and of the flying trials required by paragraph 24, the designer will be required to furnish the Secretary of State with copies of such design data, calculations, reports on tests, and drawings as may be required by the Secretary of State to such number and in such form as may be required by him and also with a report in the following form.

Report by Designer of

Aircraft type (Name and Description) .....

Constructor's No. .....

Nationality and Registration Marks (if any) .....

Classification: Categories ..... Subdivisions .....

I/we the designer(s) of the above aircraft hereby report and certify that—

(a) Except as stated at (i) below, the design of the above aircraft fulfils the requirements, other than those relating to tests in flight, prescribed for aircraft of the above categories and subdivisions in the Airworthiness Handbook for Civil Aircraft (A.P. 1208) and such other requirements relating to the above aircraft as may have been notified to me/us in writing by or on behalf of the Secretary of State.

(b) Except as stated in (ii) below, the load factors of the above aircraft have, throughout the course of its design, been determined by the official methods laid down in the Handbook of Strength Calculations (A.P. 970).

(c) The calculations made during the course of the design of the above aircraft have been checked in a manner which has been approved by the Secretary of State, and every reasonable precaution has been taken to ensure arithmetical accuracy.

(d) The design data, calculations, reports on tests, and drawings furnished by me/us to the Secretary of State in accordance with paragraph 12 of the Air Navigation Directions, 1932 (A.N.D. 11), are a true and accurate record of the design of the above aircraft.

(i) .....

.....

.....

(ii) .....

.....

.....

(Signed) .....

Date.....

## METHOD II

13. After forwarding to the Secretary (D.C.A.), Air Ministry, an application form duly completed for a certificate of airworthiness for a type aircraft, the applicant shall submit to the Airworthiness Department, Royal Aircraft Establishment, South Farnborough, Hants, general arrangement drawings of the proposed aircraft, together with such particulars as may be required by the Secretary of State to enable him to form a preliminary opinion as to the general safety of the aircraft.

14. The applicant shall submit subsequently such drawings and particulars of the proposed aircraft as may be required by the Secretary of State for checking in detail the safety of the aircraft. These drawings and particulars should, as far as possible, be in accordance with C.A. Forms which will be supplied, on application, by the Airworthiness Department. Fully dimensioned sketches in duplicate may be sufficient to enable the checking to be proceeded with.

The work of checking any particular component will not be begun until the requisite drawings and particulars and the evidence called for under paragraph 15 below have been received.

15. The applicant shall furnish proof that the design throughout meets the requirements for safety laid down by the Secretary of State. In respect of the structural strength of any part or component such proof may take one or both of the following forms at the option of the Secretary of State—

(a) A set of strength calculations based on data and assumptions and carried out by methods approved by the Secretary of State in respect of the particular design.

(b) Strength tests on one or more specimen parts or components, together with such supplementary material or control tests as may be required, carried out under the supervision of, and under conditions approved by, the Secretary of State.

If in the opinion of the Secretary of State the design is one to which the assumptions usually make or the methods usually employed for checking in detail the safety of aircraft are not strictly applicable, then he may require the applicant to provide at the applicant's own expense satisfactory evidence based on wind channel tests or otherwise as to the distribution of loads on the components of the aircraft.

Alternatively to the production by the applicant of such evidence of the safety of the design as may be required under this paragraph, the Secretary of State may, at his discretion and upon request by the applicant, and at the applicant's expense, carry out, on behalf of the applicant, any or all of the necessary calculations, strength tests, and the construction and testing of models for the wind channel, upon supply of the requisite data or specimens.

16. Except as provided for in paragraphs 15, 17, and 30, no modifications, which, in the opinion of the Secretary of State, affect the safety of the aircraft, may be made subsequent to the submission of the particulars and drawings required under paragraphs 13 and 14, or subsequent to the provisions or delivery of any matters required under paragraph 15, unless details of such modifications have been submitted to the Airworthiness Department and approved. Consideration of any modifications so submitted may, at the discretion of the Secretary of State, be made subject to the submission of a fresh application for a certificate of airworthiness, and if they are of a major character a fresh application will normally be required.

17. At any time during the consideration of the application the applicant may be required to make any modifications to the aircraft which are considered by the Secretary of State to be necessary for safety. Before, however, such modifications are carried out, full drawings and particulars thereof must be submitted to the Airworthiness Department, and approved.

18. The applicant may proceed with the construction of any part or parts of the aircraft as and when the drawings of such part or parts are approved.

#### C. Approval of Workmanship and Materials: Inspection During Construction: Final Inspection

##### TYPE AIRCRAFT

19.—(a) Inspection of type aircraft will be carried out by the Secretary of State, but the inspection of all details and components of such aircraft shall be carried out by the constructor, who shall provide adequate inspecting staff for this purpose. In addition, each component shall be finally inspected and approved by the Secretary of State.

(b) Constructors shall notify the Director of Aeronautical Inspection seven days before commencing work on any part of the aircraft the inspection of which is necessary during process of construction.

(c) All materials used in the construction of the aircraft shall be in accordance with the specifications approved for the type design, and every batch of such material shall be proved to comply with such specification by suitable examination, sampling and testing by approved methods.

(d) Every detail and part must be proved by the constructor's inspecting staff referred to in (a) of this paragraph by suitable process of testing and inspection to conform strictly to the approved type design. The constructor's inspecting staff shall stamp, or otherwise provide means for the identification of, each detail and part approved by them for incorporation in the aircraft, in such a way that the individual responsible for such approval can subsequently be identified.

(e) Only details and parts which have been approved in accordance with (d) of this paragraph, or details or parts for which special "concessions" have been granted as laid down in paragraph 21, may be issued by the constructor to the shops for assembly into components.

(f) The constructor shall maintain an efficient process inspection during the work of assembly, and record the progress of such inspection for each component. Every component shall be finally inspected and approved by a qualified member of his inspection staff, who shall stamp the component in such a way that he may afterwards be identified as the person responsible, and shall also sign the inspection record.

(g) Operations such as heat treatment of steels, seasoning and conversion of timber, gluing of important parts, doping, etc., must be carried out by methods approved.

(h) The constructor shall ensure that all components and parts obtained from sub-contractors have been inspected and approved in accordance with these conditions.

(i) The constructor (of the aircraft or engine, as may be arranged) shall ensure that all engines have been inspected and approved in accordance with these conditions and have undergone, to the satisfaction of the Secretary of State, such tests as may be required by him. The constructor shall provide adequate facilities for these tests.

(j) The constructor shall satisfy the Secretary of State that the specified instruments and equipment have been manufactured, and any repairs thereto executed, under approved conditions and that such instruments comply with current specifications approved by him.

(k) The aircraft constructor shall ensure by suitable inspection that all engines, instruments and parts (including wiring for electrical equipment other than wireless apparatus) that are fitted into the aircraft are so installed as to function correctly, and, if wireless telegraphy or wireless telephony apparatus is fitted, that the installation of such apparatus, including bonding and screening, is not such as to prejudice the operation of the aircraft and is in conformity with such requirements as may have been laid down by the Secretary of State. The individuals responsible for such inspection shall be indicated by signatures on the inspection record referred to in (f) of this paragraph.

(l) On completion of the construction of the aircraft and of flying trials under paragraph 24, but before the carrying out of any official flying trials under paragraph 25, a final inspection of the aircraft as regards its fitness for flight shall be made by the Secretary of State.

(m) On completion of the whole of the inspection operations specified above, the constructor shall forward to the Secretary, Air Ministry, a summary of the inspection record of the aircraft. For this purpose A.M. Form 1221 (copies of which can be obtained on demand) shall be used. All the particulars required by the Form must be given.

#### SUBSEQUENT AIRCRAFT

20.—(a) Inspection of subsequent aircraft, including all such inspection as was carried out in the case of the type aircraft by the Secretary of State, will be carried out by the constructor's inspecting staff.

(b) The constructor shall fulfil the conditions specified in paragraph 19, sub-paragraphs (c) to (h) inclusive.

(c) The constructor shall satisfy the Secretary of State that his inspecting staff are such as to ensure that aircraft passed by them conform in all essential respects to the type aircraft.

(d) On completion of the construction of the aircraft and of flying trials under paragraph 28, a final inspection of the aircraft as regards its fitness for flight shall be made by a representative or representatives of the constructor holding ground engineer's licences in Categories A and C for the type of aircraft concerned, and if the result of this inspection warrants it, a certificate of fitness for flight, in a form satisfactory to the Secretary of State, shall be furnished to him.

(e) On completion of the whole of the inspection operations specified above, the constructor shall forward to the Secretary of State a summary of the inspection record of the aircraft. For this purpose, A.M. Form 1221 (copies of which can be obtained on demand) shall be used, and a separate form employed for each aircraft. All the particulars required by the Form must be given.

#### CONCESSIONS

21.—(1) For the purpose of this section of these Directions a "concession" means permission to use a limited quantity of material or a limited number of details or parts which have been incorrectly manufactured but are not unserviceable.

## AIR NAVIGATION DIRECTIONS

(2) Concessions may be granted by the constructor's inspecting staff referred to in (a) of paragraph 19 subject to the following conditions and limitations—

(a) Concessions shall be recorded in some permanent form which shall be to the satisfaction of the Secretary of State. Each concession shall be numbered serially, and the record shall include full particulars of the concession and state the quantity of material or the number of detail or parts covered by the concession.

(b) Where practicable the details or parts affected by a concession shall be specially marked in some way for the purpose of identification.

(c) No concession affecting either strength or functioning may be granted unless full details of the intended concession have been submitted to the Secretary of State and his approval thereto has been obtained.

### SPECIAL INSPECTION ARRANGEMENTS

22. When the constructor does not possess adequate facilities or adequate staff or is for any other reason unable to fulfil all or any of the requirements of paragraphs 19 and 20, other arrangements for fulfilling these requirements may be sanctioned by the Secretary of State.

### D. Instruments and Equipment<sup>1</sup>

23. With reference to paragraphs 2 and 5 of Schedule II of the Order, the instruments and equipment with which an aircraft is required to be fitted for the purpose of the issue of a certificate of airworthiness are, in the cases indicated, as follows—

(1) Flying machines.

Air speed indicator.

Altimeter.

Such gauges as are considered necessary by the Secretary of State for the particular installation.

Revolution indicator.

(2) Airships.

(i) In all cases—

Air speed indicator.

Altimeter.

Such gauges as are considered necessary by the Secretary of State for the particular installation.

Revolution indicator.

Fore-and-aft level.

Manometer for each gas-bag or balloonette.

Statoscope.

(ii) In the case of airships of or exceeding a designed capacity of 700,000 cubic feet—

Distant reading gas and air temperature thermometer.

(3) Free balloons.

Altimeter.

Statoscope.

The instruments and equipments must be of approved types.

### E. Flying Trials

#### TYPE AIRCRAFT

24. On completion of the aircraft and of any modifications which may have been required under paragraph 11 or paragraph 17 as the case may be, flying trials will be carried out by the applicant's or constructor's pilot in the presence of representatives of the Secretary of State.

<sup>1</sup> As regards the instruments and equipment required to be carried by British aircraft when flying, see Section VIII.

25. After the satisfactory completion of the flying trials provided for in paragraph 24, and, in the case of aircraft approval of whose design is being dealt with under Method I, after the receipt and acceptance by the Secretary of State of a report under paragraph 12, the aircraft (if other than a balloon) shall be held at the disposal of the Secretary of State for official flying trials. These trials will take place at an aerodrome selected by the Secretary of State, which will normally be, for landplanes, the Aeroplane and Armament Experimental Establishment, Martlesham Heath, Woodbridge, Suffolk, and for seaplanes, the Marine Aircraft Experimental Establishment, Felixstowe, Suffolk. Except in the case of an airship, the trials will be carried out by the Secretary of State. In the case of an airship they will be carried out by the applicant or constructor with a representative of the Secretary of State on board, and so that such representative has full facilities for satisfying himself as to the control of the airship in the air.

26. The Secretary of State will not be liable for any loss or damage caused to the aircraft while in his custody for the purpose of official flying trials or in the course of transit to or from the aerodrome selected.

27. If, after flying trials under paragraphs 24 and/or 25 have been carried out, any modification is made to the aircraft (whether under paragraph 11 or paragraph 17 or otherwise) compliance afresh with paragraphs 24 and/or 25 may be required.

#### SUBSEQUENT AIRCRAFT

28. After completion of the aircraft, flying trials will be carried out by the applicant's or constructor's pilot under approved arrangements.

#### F. Issue of Certificate, etc.

##### TYPE AIRCRAFT

29. On the completion of the official flying trials the applicant will be supplied with a report on the trials.

30. On the satisfactory completion of official flying trials (or, in the case of a balloon of the trials under paragraph 24) and after completion to the satisfaction of the Secretary of State of any modifications considered necessary for safety, and subject to compliance with paragraph 23, a certificate of airworthiness will be issued.

#### SUBSEQUENT AIRCRAFT

31. Following the receipt by the Secretary (D.C.A.), Air Ministry, of an application form duly completed, a certificate of airworthiness will be granted subject to compliance with paragraphs 20, 23 and 28.

#### G. Weight

32. Every flying machine shall be weighed to the satisfaction of the Secretary of State.

(a) Before a certificate of airworthiness is issued in respect thereof; and

(b) At such times after the issue of a certificate of airworthiness as the Secretary of State may require.

33. Every flying machine for which a certificate of airworthiness is for the time being in force shall bear clearly painted upon it in a prominent position—

(a) Its weight empty (including water in radiators), as ascertained at its last previous weighing; and

(b) The maximum total weight authorized for it, as shown for the time being in its certificate of airworthiness; and shall carry displayed in a prominent position inside it a weight schedule showing what items of equipment (if any) are included in the "weight empty (including water in radiators)" as painted on it.

#### H. Modifications Subsequent to Issue of Certificate.

34. If at any time the Secretary of State considers modifications to an aircraft, in respect of which a certificate of airworthiness is in force, to be necessary for safety, he may require such modifications to be carried out as a condition of the certificate of airworthiness remaining in force.

35.—(1) If modifications (including changes of equipment or its installation) which affect the safety of the aircraft are carried out to an aircraft in respect of which a certificate of airworthiness is in force, then, until the modifications have been approved, the aircraft shall not fly except in so far as under the Order it might fly if it had no certificate of airworthiness.

(2) When such modifications are carried out by a person or firm recognized by the Secretary of State as a person or firm from whom he is prepared to accept reports under paragraph 5 of Schedule II of the Order in respect of aircraft of the kind in question, that person or firm shall furnish the Secretary of State with copies of such design data, calculations, reports on tests, and drawings as may be required by the Secretary of State in such form as may be required by him and also with a report in the following form—

Report on Modification(s) to

Aircraft Type (Name and Description) .....

Constructor's No. .....

Nationality and Registration Marks.....

Classification : Categories.....Sub-divisions..

I/we hereby report and certify that—

(a) I/we have carried out the modifications to the above aircraft which are specified hereunder:

(b) Except as stated at (i) below, these modifications are such that the design of the above aircraft still fulfils the requirements, other than those relating to tests in flight, prescribed for aircraft of the above categories and subdivisions in the Airworthiness Handbook for Civil Aircraft (A.P. 1208) and such other requirements relating to the above aircraft and/or the above-mentioned modifications as may have been notified to me/us in writing by or on behalf of the Secretary of State.

(c) Except as stated at (ii) below, the load factors of the above aircraft as now modified have throughout the course of the design of the modified components been determined by the official methods laid down in the Handbook of Strength Calculations (A.P. 970).<sup>1</sup>

(d) The calculations made during the course of the design of the above-mentioned modifications have been checked in a manner which has been approved by the Secretary of State, and every precaution has been taken to ensure arithmetical accuracy.<sup>1</sup>

<sup>1</sup> Strike out this paragraph if not applicable.

(e) The design data, calculations, reports on tests and drawings furnished by me/us to the Secretary of State in accordance with paragraph 35 (2) of the Air Navigation Directions, 1932 (A.N.D. 11), are a true and accurate record of the design of the above-mentioned modifications.

Particulars of Modifications.....

.....

.....

(i) .....

.....

.....

(ii) .....

.....

.....

(Signed) .....

Date.....

(3) The requirements of paragraphs 57 and 58 as regards the inspection of modifications and the certification thereof must be complied with.

36. The Secretary of State may, in the case of modifications affecting the structure of the aircraft, the engine, or the installations, or any modifications affecting the navigation of, or the pilot's view while navigating, the aircraft, require in respect of the aircraft proposed to be so modified the submission of an application for a certificate of airworthiness for a type aircraft.

### I. Classification of Aircraft

#### FLYING MACHINES

37. *Principles of Classification.*—Every flying machine for which a certificate of airworthiness is granted will be classified on such certificate as belonging to one of the following Categories, and to one or more of the Subdivisions—

(1) Normal Category—

Subdivision (a); public transport machines for passengers.

Subdivision (b); public transport machines for mails.

Subdivision (c); public transport machines for goods.

"Public transport machines" are defined as those which may be used for flight with passengers, mails, or goods, for remuneration.

Subdivision (d); private machines.

"Private machines" are defined as those which may be used for purposes other than either the carriage of passengers, mails, or goods for remuneration or any other commercial or industrial purpose.

Subdivision (e); aerial work machines.

"Aerial work machines" are defined as those which may be used for commercial or industrial purposes or any lucrative purpose not included in the definition of public transport machines. (These purposes, which may depend on the incorporation of special structural features or equipment, may be limited by the certificate of airworthiness.)

## (2) Special Category—

Subdivision (f); racing or record machines.

“Racing or record machines” are defined as those which are specially intended or arranged for the purpose of sporting or technical performances, to the exclusion of any other use.

Subdivision (g); research or experimental machines.

“Research or experimental machines” are defined as those which are specially intended or arranged for the purpose of experimenting in flight with regard to new apparatus and checking the results thereof, to the exclusion of any other use.

## (3) Acrobatic Category—

Subdivisions (a) to (g) in the two preceding Categories.

*Flying Conditions Applicable to the Various Categories*

## Normal Category—

Machines in the Normal Category, subdivisions (a) to (e), must not be flown at indicated air speeds greatly in excess of the indicated air speed corresponding to steady horizontal flight at the international number of revolutions per minute, as specified in the certificate of airworthiness, at the rated altitude of the engine(s), and must in no circumstances be flown at speeds greater than 50 per cent in excess of this speed. They are precluded from any evolution which might lead to abrupt variations in altitude.

## Special Category—

The conditions of flight for machines in the Special Category, subdivisions (f) and (g), are not specified, as each individual machine will be treated on its merits. Flights of such flying machines may, as a precautionary measure, be limited to certain areas and to certain periods.

## Acrobatic Category—

Machines in the Acrobatic Category, subdivisions (a) to (g), are not restricted as to the indicated air speed at which they may be flown and may be used for the performance of acrobatic manoeuvres.

*38. Classification of Individual Machines.* (1) The Category in which a machine may be given a certificate of airworthiness will depend mainly upon its load factors.

(2) The subdivisions, which are the means of further classifying machines according to the purposes for which they may be used, are defined above.

These definitions are not, however, to be understood as necessarily restricting a machine to use for the purpose of only one subdivision, for, as indicated in paragraph 39 (2), it may be used for the purpose of more than one subdivision, provided that (except in the case mentioned in 3 (i) of this paragraph) the subdivisions concerned are specified on its certificate of airworthiness.

(3) (i) A public transport machine for passengers may be used for the carriage of passengers without remuneration.

(ii) The classification of a machine only under subdivision (d) does not enable it to be used for the purposes of public transport.

(iii) A machine will be classified as an aerial work machine under subdivision (e) for the special purposes for which its structural features and/or equipment are accepted as satisfactory.

*39. Employment of Machines.* (1) A machine may be employed, in any given flight, solely for the purpose of one of the subdivisions in which it is classified on its certificate of airworthiness, provided that in that flight all requirements (including those in respect of the equipment and operation of the machine) which attach to the subdivision concerned are complied with.

(2) A machine may be employed, in any given flight, for the purpose of more than one of the subdivisions in which it is classified on its certificate of airworthiness, provided that in that flight all requirements (including those in

respect of the equipment and operation of the machine) which are common to the subdivisions concerned are complied with, and in cases where differences occur between the requirements attached to the subdivisions in question the highest standard is satisfied.

(3) In the event of its being desired to use a machine for purposes of subdivisions other than those stated on its certificate of airworthiness, an application for reclassification should be forwarded to the Secretary, Air Ministry, prior to the machine being used for such purposes. The existing certificate of airworthiness will then be endorsed, or a new certificate issued, if it can be shown that all requirements in respect of the proposed new classification are satisfied.

40. *Application for a Certificate of Airworthiness.* When applying for a certificate of airworthiness for a flying machine an applicant should state the proposed category and the purpose or purposes for which it is proposed to employ the machine in question.

#### AIRSHIPS AND BALLOONS

41. Paragraphs 37, 38, 39, and 40 apply to airships and balloons as they apply to flying machines, subject to the following modifications—

- (1) The Normal Category consists of the following subdivisions—
  - (i) Public transport airships and balloons.
  - (ii) Private airships and balloons.
  - (iii) Aerial work airships and balloons.
- (2) The Special Category consists of the following subdivisions—
  - (iv) Racing or record airships and balloons.
  - (v) Research or experimental airships and balloons.
- (3) There is no Acrobatic Category.
- (4) References to subdivisions (ii) and (iii) are substituted for references to subdivisions (d) and (e) respectively.

#### J. Renewal of Certificate of Airworthiness

42. Application for the renewal of a certificate of airworthiness should be made on C.A. Form 79 to the Secretary (D.C.A.), Air Ministry, London, W.C.2, at least one month before the date from which the renewal is required to be effected, in order that the necessary arrangements may be made for the inspection of the aircraft. Copies of C.A. Form 79 may be obtained, on application, from the Secretary, Air Ministry.

### SECTION III. LICENSING AND DUTIES OF GROUND ENGINEERS

43. The procedure for the issue of licences to persons desirous of being licensed as competent persons for the inspection, etc., of aircraft in accordance with Schedule II to the Order, and for other purposes in connection with the Order, is as set out below. Persons so licensed are hereinafter referred to as "ground engineers."

44. A person may be licensed as a ground engineer in any or all of the following categories—

- A. Inspection of aircraft before flight.
- B. Inspection of aircraft after overhaul.
- C. Inspection of aero-engines before flight.
- D. Inspection of aero-engines after overhaul.
- X. Other duties, as specified in the licence, which, under the Order, are required to be performed by a licensed ground engineer.

45. In order to qualify for the issue of a ground engineer's licence, a candidate—

- (a) Must not be under 21 years of age;
- (b) Must have passed an examination held by the Secretary of State; and
- (c) Must produce satisfactory proof of practical experience or knowledge in accordance with paragraph 47 below.

Provided, however, that no licence will be granted if the Secretary of State is not satisfied that the applicant is a fit and proper person to hold the licence.

46. Syllabuses of the examinations for the various categories may be obtained on application to the Secretary (D.A.I.), Air Ministry, London, W.C.2.

47.—(1) A candidate will be required to have had such practical experience as, in the opinion of the Secretary of State, will enable him to perform satisfactorily the duties for which the licence is required.

(2) For a licence in Category A and/or Category B an applicant will be required to have had practical experience on aircraft maintenance and/or construction.

(3) For a licence in Category C and/or Category D an applicant will be required to have had practical experience on aero-engine maintenance and/or construction.

48. Where a candidate's experience or knowledge is limited to any particular type or types of aircraft or engine, a licence may be granted in respect of such type or types only.

49. Applications for licences should be made to the Secretary (D.C.A.), Air Ministry, London, W.C.2, by whom application forms will be supplied on demand. After forwarding to the Secretary, Air Ministry, a completed application form, the applicant will be directed to report to the Director of Aeronautical Inspection, Air Ministry, for examination.

50. Aircraft, engines, etc., certified by licensed ground engineers, and work performed by them within the terms of their licences, will be periodically examined by the Secretary of State, who reserves the right to cancel, suspend or endorse the licences of the ground engineers concerned should it appear to him, as result of the examination, that such certification or work has not been carried out in a careful and competent manner.

51. The Secretary of State reserves the right to cancel, suspend or endorse the licence of a ground engineer who signs a certificate in a category for which he is not licensed.

52. The Secretary of State may, on sufficient ground being shown to his satisfaction, after due inquiry, cancel, suspend or endorse the licence of a ground engineer in circumstances other than those specified in paragraphs 50 and 51.

53. Ground engineers' licences will be valid for a period of twelve months, and will then be subject to renewal.

[The holder of a licence who applies for the renewal thereof may be required to satisfy all or any of the requirements which are for the time being applicable on the issue of a ground engineer's licence.]

#### SECTION IV. INSPECTION AND CERTIFICATION OF AIRCRAFT BEFORE FLIGHT, ETC.

54. With reference to paragraph 8 of Schedule II of the Order, the inspection thereunder of an aircraft shall be in accordance with the following provisions—

(a) Inspection of the aircraft (including its instruments and equipment, but exclusive of the engine or engines and engine installation and of the instruments relating thereto) shall be carried out by a ground engineer licensed in Category A in respect of aircraft of the type in question.

(b) In the case of a flying machine or an airship, inspection of the engine or engines and engine installation and of the instruments relating thereto shall be carried out by a ground engineer licensed in Category C in respect of engines of the type or types in question.

(c) The whole of the inspection may be carried out by the same ground engineer, provided that he is licensed both in Category A and in Category C in respect of aircraft and engines of the types in question.

55. The certificate as to the safety of the aircraft for flight required by paragraph 8 of Schedule II of the Order shall be in the following form, or in such other form as may be approved as suitable for the purpose—

(1) In the case of a flying machine or airship—

CERTIFICATE OF SAFETY FOR FLIGHT

Aircraft Type .....

Nationality and Registration Marks.....

(a) I hereby certify that I have this day inspected the above aircraft (including its instruments and equipment, but exclusive of the engine(s) and engine installation and of the instruments relating thereto), and that I am satisfied that it is safe in every way for flight, provided that the conditions of loading specified in the certificate of airworthiness are complied with.

The time at which this inspection was completed was.....

(Signed) .....

(Ground Engineer; Licence No.) .....

Date ..... Time .....

(b) And I hereby certify that I have this day inspected the engine(s) and engine installation (including the instruments relating thereto) of the above aircraft, and that I am satisfied that they are in every way fit for flight.

The time at which this inspection was completed was .....

(Signed) .....

(Ground Engineer; Licence No.) .....

Date ..... Time .....

(2) In the case of a free balloon—

CERTIFICATE OF SAFETY FOR FLIGHT

Free Balloon Type .....

Nationality and Registration Marks .....

I hereby certify that I have this day inspected the above free balloon (including its instruments and equipment), and that I am satisfied that it is safe in every way for flight, provided that the conditions of loading specified in the certificate of airworthiness are complied with.

The time at which this inspection was completed was .....

(Signed) .....

(Ground Engineer; Licence No.) .....

Date ..... Time .....

(3) In the case of a fixed balloon—

CERTIFICATE OF SAFETY FOR FLIGHT

Fixed Balloon Type .....

Nationality and Registration Marks .....

I hereby certify that I have this day inspected the above fixed balloon (including its instruments and equipment), and also the winch and cable by which it is operated, and that I am satisfied that it and they are safe in every way for flight, provided that the conditions of loading specified in the certificate of airworthiness are complied with.

The time at which this inspection was completed was

(Signed) .....

(Ground Engineer; Licence No.) .....

Date ..... Time .....

56. Copies of certificates under paragraph 8 of Schedule II to the Order shall be dealt with as provided in paragraph 10 of that Schedule.

#### SECTION V. OVERHAULS, REPAIRS, ETC.

57. When any aircraft registered in Great Britain and Northern Ireland in respect of which a certificate of airworthiness has been issued or validated by the Secretary of State is overhauled, repaired, or modified, or when any part thereof is replaced, the aircraft shall not again fly (except in so far as under the Order it might fly if it had no certificate of airworthiness) unless and until the following conditions have been complied with—

(1) In the case of repairs, overhauls or replacements—

(i) If the certificate of airworthiness was issued by the Secretary of State, the work must be in all essential respects in accordance either with (a) the approved type design in conformity with which the aircraft was constructed, including any modifications to that design or to the aircraft that may have been required by the Secretary of State, or else with (b) any repair scheme issued by the constructors of the aircraft that has been approved by the Secretary of State.

(ii) If the certificate of airworthiness was not issued by the Secretary of State but has been validated by him, the work must be in all essential respects in accordance either with (a) the type design in conformity with which the aircraft was constructed, including any modifications to that design or to the aircraft that may have been required by the duly competent authority responsible for approving the type design, or by the Secretary of State as a condition of the validation of the certificate of airworthiness, or else with (b) any repair scheme issued by the constructors of the aircraft that has been approved by such duly competent authority as aforesaid.

(2) In the case of repairs, overhauls, or replacements, all materials used must be equal to those authorized for the type design in conformity with which the aircraft was constructed.

(3) In all cases all work must be inspected in accordance with the conditions required for the inspection of subsequent aircraft that are applicable to the case.

(4) In all cases a certificate, in accordance with the terms of paragraph 58, must be given.

Provided that in cases of repairs where it is not reasonably practicable to comply with the above requirements, whether by reason of particulars of the type design not being available or otherwise, a temporary repair may be made for the purpose of enabling the aircraft to proceed directly to the nearest place at which a repair complying with the above requirements can be carried out, and, if the pilot is satisfied that having regard to the circumstances and exigencies of the case, such repair is adequate for the purpose, the aircraft may then proceed to fly to such place. Provided also that if it is desired that such a temporary repair should remain in service, it shall be treated as a modification requiring approval under paragraph 35, and until such approval has been obtained the aircraft shall not fly except as specified in the preceding proviso or in so far as under the Order it might fly if it had no certificate of airworthiness.

58.—(1) Every certificate required under paragraph 57 shall be appended to particulars of the overhaul, repair, modification or replacement, to which it relates and shall be in the following form—

I hereby certify that, in carrying out  
 the { overhaul  
       repair  
       modification  
       replacement

specified above, all the conditions and requirements applicable thereto under the Air Navigation Act, 1920, as amended by any other enactment, have been complied with.

Signed..

Date .....

(3) Every such certificate shall be signed by a ground engineer qualified under the terms and conditions of his licence to carry out the overhaul, repair, modification, or replacement to which the certificate relates, or by the authorized representative of a firm or company approved for the purpose of giving such certificates. Provided that if the overhaul, repair or replacement has been carried out at a Royal Air Force aerodrome by Royal Air Force personnel the certificate may be signed by the officer in charge of workshops at that aerodrome.

(4) Such certificates shall, when relating to the aircraft exclusive of the engine or engines, be written in the aircraft log book, and, when relating to the engine or engines, be written in the engine log book. Provided, however, that if the appropriate log book is not at the place where the overhaul, repair, modification or replacement is carried out, the certificate may be given separately for the log book, in which case it shall be pasted in the log book as soon as reasonably practicable and meanwhile shall be kept with the journey log book.

Provided further that, in the case of aircraft which are not passenger or goods aircraft and for which aircraft and engine log books are not kept, the certificate shall be entered in some other suitable book and that such book shall be produced on demand for the inspection of the Secretary of State.

59. When structural damage which materially impairs its safety occurs to aircraft registered in Great Britain and Northern Ireland in respect of which a certificate of airworthiness has been issued or validated by the Secretary of State, the aircraft shall not again fly (except in so far as under the Order it might fly if it had no certificate of airworthiness) until such damage has been repaired in accordance with the requirements of paragraph 57, and to the satisfaction of the person by whom the certificate required under that paragraph is signed.

#### SECTION VI. SPECIAL PROVISIONS AS TO EXPERIMENTAL OR TEST FLIGHTS, ETC.

60. With reference to proviso (a) to Article 3 (1) and proviso (b) to Article 4 (1) of the Order, an aircraft which does not comply with all or any of the conditions mentioned in those provisos may nevertheless fly within Great Britain and Northern Ireland provided that its flight (a) does not contravene any of the other provisions of the Order, and (b) either is carried out under and in accordance with special permission in writing given by the Secretary of State for the purpose or else is such that either the "A conditions" or the "B conditions" set out below are satisfied.

*A Conditions—*

(1) An application for the issue or renewal of a certificate of airworthiness in respect of the aircraft, or an application for approval of modifications under paragraph 35 of these Directions, shall have been duly made to the Air Ministry prior to the flight; and

(2) The aircraft shall be either an aircraft in respect of which a certificate of airworthiness has already been issued by the Secretary of State or else a "subsequent aircraft"; and

(3) The flight shall be carried out solely for the purpose of qualifying for the issue or renewal of a certificate of airworthiness or otherwise solely for the purpose of experiment or test; and

(4) The flight shall take place wholly within three miles of a licensed aerodrome, a Royal Air Force aerodrome, an aerodrome under the control of the Secretary of State, or an aircraft factory; and

(5) The flight shall not have been forbidden by or on behalf of the Secretary of State; and

(6) No part of the flight shall take place over any populous area or concourse of people.

*B. Conditions—*

(1) The flight shall be carried out solely for the purpose of qualifying for the issue or renewal of a certificate of airworthiness or otherwise solely for the purpose of experiment or test; and

(2) The flight shall be carried out under the control of a person or firm specially approved for the purpose of this provision and subject to any conditions or limitations attached to such approval, and the aircraft shall have been designed and constructed by a person or firm or persons or firms so approved; and

(3) The aircraft shall be marked either (if registered) in accordance with Schedule I to the Order or else in a manner approved for the purpose of this provision; and

(4) No part of the flight shall take place over any populous area or concourse of people.

**SECTION VII. FIXED BALLOONS**

61. With reference to Article 4 (2) of the Order, whereby fixed balloons may not be flown within Great Britain and Northern Ireland except with the special permission in writing of the Secretary of State, applications for such permission should be made to the Secretary (D.C.A.), Air Ministry, London, W.C.2. They should include in each case a description of the balloon and state where and when it is desired to be flown.

62. The conditions normally attached to such permissions include the following—

(1) The flying ground from which the balloon is flown shall be such that in every direction from the winch to which the cable of the balloon is attached there is a distance free from obstructions of at least 100 yards.

(2) The balloon shall not be left unattended either by day or night unless it has been hauled down, and either has been "bagged" down or has had its ripping panel made fast to the ground.

(3) The winch to which the cable of the balloon is attached and the cable shall be of approved types.

(4) The person in charge of the winch shall be a ground engineer licensed in Category X for this duty.

**SECTION VIII. INSTRUMENTS AND EQUIPMENT TO BE CARRIED<sup>1</sup>**

63. With reference to Article 14 of the Order, the instruments and equip-

<sup>1</sup> As regards the instruments and equipment required to be fitted for the purpose of the issue of a certificate of airworthiness, see paragraph 23.

ment to be carried and maintained in working order in British aircraft registered in Great Britain and Northern Ireland, when flying, are, in the cases indicated, as follows—

- (1) Flying machines.
  - (i) In all flying machines—
    - (a) For all flights—
      - The instruments specified in (1) of paragraph 23.
      - Safety belt for each person (including the pilot) carried in an open cock-pit and for the pilot or pilots whether carried in an open cock-pit or not.
    - (b) For flights which extend beyond a radius of three miles from the point of departure—
      - Equipment, as required by the circumstances of the case, for making the signals prescribed for aircraft in Section II of Schedule IV of the Order.
    - (c) For flights by night—
      - Navigation lights.
      - Illumination for instruments and equipment.
  - (ii) In amphibian flying machines—
    - Indicator of position of landing wheels.
  - (iii) In aerial work machines—
    - Hand fire extinguisher in each main compartment.
  - (iv) In flying machines in which smoking is permitted—
    - Hand fire extinguisher in each compartment in which smoking is permitted.
  - (v) In flying machines carrying passengers or goods for hire or reward—
    - (a) For all flights—
      - Hand fire extinguisher.
    - (b) For all flights in flying machines capable of carrying ten or more persons including the crew—
      - Hand fire extinguisher in each main passenger compartment with a minimum of two extinguishers.
    - (c) For flights which extend beyond a radius of 20 miles beyond the point of departure—
      - Compass.
      - Watch.
      - Turn indicator, except for flying machines in which the number of seats (including those for the crew) as shown in the certificate of airworthiness is not more than five.
      - Map or maps to cover the whole route of the proposed flight.
    - (d) For flights on which, under Section XI of these Directions, a licensed navigator is required to be on board—
      - Drift indicator, except for flying machines in which the number of seats (including those for the crew) as shown in the certificate of airworthiness is not more than five.
      - (e) For flights on which a licensed navigator other than the pilot is on board—
        - Chart table.
        - Navigation instruments.

- (f) For flights at any point of which the machine is more than ten miles from the nearest land—  
Life belt for each person on board.
- (g) For flights by night—  
Landing lights (lamps or wing tip flares).
  
- (2) Airships.
  - (i) For all flights—  
The instruments specified in (2) of paragraph 23.  
Watch.  
Compass.  
Drift sight.  
Map or maps to cover the whole route of the proposed flight.  
Chart table.  
Navigation instruments.  
Equipment, as required by the circumstances of the case, for making the signals prescribed for aircraft in Section II of Schedule IV of the Order.
  - (ii) For flights by night—  
Navigation lights.  
Illumination for instruments and equipment.
  - (iii) For flights at any point of which the airship is more than ten miles from the nearest land—  
Life belt for each person on board.
  
- (3) Balloons.
  - (i) Free balloons carrying passengers for hire or reward—
    - (a) For all flights—  
The instruments specified in (3) of paragraph 23.  
Compass.  
Watch.  
Map or maps to cover the whole route of the proposed flight.  
Equipment, as required by the circumstances of the case, for making the signals prescribed for aircraft in Section II of Schedule IV of the Order.
    - (b) For flights by night—  
Navigation lights.  
Illumination for instruments and equipment.
    - (c) For flights at any point of which the balloon is more than ten miles from the nearest land—  
Life belt for each person on board.
  - (ii) Free balloons not carrying passengers or goods for hire or reward—
    - (a) For all flights—  
The instruments specified in (3) of paragraph 23.
    - (b) For flights by night—  
Navigation lights.
  - (iii) Fixed balloons.
    - (a) For all flights—  
The instruments specified in (3) of paragraph 23.
    - (b) For flights by night—  
Lights as prescribed in paragraph 10 (1) of Schedule IV of the Order.

64. With regard to paragraph 63—

- (a) The instruments and equipment must be of approved types.
- (b) The expression "flight by night" means a flight any part of which takes place between sunset and sunrise.
- (c) Where only one fire extinguisher is carried, it must be readily available for use by the pilot. Where two or more are carried, one must be readily available for use by the pilot.

#### SECTION IX. WIRELESS APPARATUS AND OPERATORS

65. With reference to Article 14A of the Order, every British aircraft registered in Great Britain and Northern Ireland and capable of carrying ten or more persons including the crew shall, when carrying passengers or goods for hire or reward, carry apparatus for wireless telegraphy capable of sending and receiving Morse or spoken messages by wireless telegraphy, which is of a type approved by the Secretary of State, and the installation of which (including bonding and screening) is in accordance with requirements laid down by him.

66. Such apparatus shall be operated under the conditions defined by the International Telecommunication Convention, Madrid, 1932.

67. The installation and use by wireless telegraphy stations of spark waves (types B of the General Regulations annexed to the International Telecommunication Convention, Madrid, 1932, is prohibited on board aircraft.

67A. A wireless operator holding an appropriate licence issued by the Postmaster General shall be carried by every British aircraft registered in Great Britain and Northern Ireland which is for the time being required under the provisions of this Section to carry apparatus for wireless telegraphy.

68. The application of the regulations in this Section of these Directions may be suspended when, owing to the absence of land wireless telegraphy organizations available for air traffic, the employment of apparatus for wireless telegraphy on board aircraft would serve no useful purpose.

69. In this Section of these Directions—

References to the number of persons which an aircraft is capable of carrying, relate to the number of persons for whom seating accommodation is normally provided in the aircraft as shown in its certificate of airworthiness.

The expression "wireless telegraphy" has the same meaning as in the Wireless Telegraphy Acts, 1904 to 1926.

NOTE. Air Navigation Directions regulating the use of apparatus for wireless telegraphy will shortly be issued, dealing *inter alia* with the nature of apparatus to be carried, the issue of certificates and licences to operators, regulations as to operators and conditions of working and inspection of apparatus, with particular reference to wireless ground engineers.

These new regulations will, when established, supersede Section IX of these Directions.

#### SECTION X. LOG BOOKS

70. With reference to Schedule III of the Order, applications for the issue of journey log books should be made, accompanied by the prescribed fee, to the Secretary (D.C.A.), Air Ministry, London, W.C.2. Such books will be issued only in respect of individual aircraft, and the first page of each book will be completed by the Air Ministry before issue.

In the case of aircraft other than airships and balloons, the book will be in the form of C.A. Form 26.

71. Aircraft log books other than for airships and balloons, engine log books, and pilot's log books shall, respectively, be, in all essentials, in the form of the following authorized patterns, viz. the Aircraft Log Book (C.A. Form 27) the Engine Log Book (C.A. Form 28) and the Pilot's Log Book (C.A. Form 24), all published by His Majesty's Stationery Office.

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Aircraft log books for airships and balloons and log books for winches of fixed balloons shall be in such forms as may be approved by the Secretary of State.

72. Entries in journey log books, other than those made by the Air Ministry before issue and any visas by aeronautical or customs authorities, shall be made and signed by the person or persons whose signature is required by the particular form of log book which is being used.

73. Journey Log Books shall be kept so as to furnish all the information and particulars for which they provide, and the Instructions for Use set out therein shall be complied with.

Provided, however, that where Journey Log Book C.A., Form 26, is used—

(i) The use of the left hand pages is optional.

(ii) When an aircraft is engaged in a number of flights upon the same day on all of which it returns to the point of departure after a flight of less than thirty minutes, entries in respect of the whole of such flights may be included on a single right-hand page of the log book. In that event the actual number of flights so included and the total duration of these flights shall be shown.

74. Entries in aircraft and engine log books other than the original entries—

(a) In the case of a certificate under paragraph 58 shall be made and signed in accordance with that paragraph.

(b) In other cases shall be made and signed by a licensed ground engineer, except that, as regards matters which could not have come to the notice of a licensed ground engineer, the entries shall be made and signed by the pilot.

75. (a) Aircraft log books, other than for airships and balloons, engine log books and pilot's log books shall be kept so as to furnish all the information and particulars provided for in the authorized patterns referred to in paragraph 71, and the Instructions for Use set out in such authorized patterns shall be complied with, subject to these Directions.

The term "repairs" in the authorized patterns shall be deemed to include all overhauls, replacements, repairs and work of a like nature.

(b) Aircraft log books for airships and balloons and log books for winches of fixed balloons shall be kept in such manner as the Secretary of State may require.

(c) When repairs to an aircraft or engine have been required in consequence either of damage caused by a forced landing or of defects which have occasioned a forced landing, the entry of such repairs made in the aircraft or engine log book shall state that they have been so required and shall identify the forced landing in question by referring to the entry thereof contained in the journey log book.

76. Entries in the journey log books and the pilot's log book shall be made at latest within 24 hours after the events to which they relate, and the relevant particulars in the journey log book shall be entered in the aircraft or engine log book at latest within 24 hours after the return of the aircraft to its station.

## SECTION XI. PERSONNEL TO BE CARRIED BY BRITISH AIRCRAFT

77. With reference to Article 13A of the Order, the provisions contained in paragraphs 78 to 81 shall apply to British aircraft registered in Great Britain and Northern Ireland.

### Navigators

78. A navigator who holds a first- or second-class licence shall be on board—

(i) Every flying machine used for the international carriage of passengers or goods for hire or reward and having to fly without landing—

(a) More than 100 miles over inhabited regions, or more than 100 miles but not more than 625 miles entirely over the high seas or uninhabited regions; or

(b) By night, more than 16 miles but not more than 625 miles; and

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(2) Every airship of less than 700,000 cubic feet capacity, for every flight by day or by night.

79. A navigator who holds a first-class licence shall be on board—  
(1) Every flying machine used for the international carriage of passengers or goods for hire or reward and having to fly without landing—

(a) More than 625 miles entirely over the high seas or uninhabited regions; or

(b) By night, more than 625 miles; and

(2) Every airship of 700,000 cubic feet capacity, or more for every flight by day or by night.

80.—(1) A flying machine pilot who holds the necessary navigator's licence may, even if he is alone on board, fulfil the duties of navigator—

(a) In the case of day flights over inhabited regions, or

(b) In the case of day flights of not more than 625 miles over the high seas or uninhabited regions, or

(c) In the case of night flights over routes suitably marked and recognized as such by the competent authorities.

(2) Unless a second pilot is on board, who can in case of need take charge of the handling of the flying machine, a flying machine pilot shall not perform the functions of navigator, either on a continuous flight of more than 625 miles over the high seas or uninhabited regions, or (except in the case provided for in sub-paragraph 1 (c) of this paragraph) on a flight by night.

(3) When, in addition to the pilot, a flying machine is required to have on board another member of the crew, the latter, if he holds the necessary navigator's licence, may fulfil the duties of navigator.

81. For the purpose of paragraphs 78 to 80—

(a) The expression an "uninhabited region" means a region where, in consequence of the sparsity of the population, and of the absence of natural landmarks or of the insufficiency of the maps, the difficulties of navigation are similar to those met with over the high seas.

(b) The expression "night" means the period commencing one hour after sunset and terminating one hour before sunrise.

(c) The expression a "flight over the high seas" means a flight in the course of which an aircraft finds itself over the sea at a distance of more than 65 miles from the nearest point of the coast.

(d) References to the carriage of passengers or goods for hire or reward include references to the carriage of passengers or goods (whether for hire or reward or not) on behalf of an air transport undertaking.

## SECTION XII. LICENSING OF PERSONNEL

### A. General

82. With reference to Article 3 (1) (iii) of the Order and Schedule V thereto, applications for the grant or validation of licences under that Schedule should be made to the Secretary (D.C.A.), Air Ministry, London, W.C.2, by whom particulars of the requirements for obtaining a licence and application forms will be supplied on demand.

83. Applicants for the grant of licences must be within the following age limits—

(1) For a pilot's licence to fly private flying machines: not under seventeen years of age.

(2) For a pilot's licence to fly public transport or aerial work flying machines: not under nineteen years of age and not over forty-five years of age.

(3) For a pilot's licence to fly balloons: not under nineteen years of age.

(4) For a pilot's licence to fly airships: not under nineteen years of age and not over forty-five years of age.

## AIR NAVIGATION DIRECTIONS

(5) For a navigator's licence: not under nineteen years of age and not over fifty years of age.

Provided that, at the discretion of the Secretary of State, a relaxation may be made as regards the upper age limit (i) in the case of an applicant for a pilot's licence to fly public transport or aerial work flying machines if prior to the date of his application he has been in service as pilot of a State flying machine, or (ii) in the case of an applicant for a pilot's licence to fly airships, or for a navigator's licence, if up to the date of his application he has been in service as an operative member of the crew of an aircraft.

84. Licences remain valid for the following periods—

(1) Pilot's licence to fly private flying machines, pilot's licence (first or second class) to fly airships: not more than twelve months.

(2) Pilot's licence to fly public transport or aerial work flying machines or pilot's licence (third class) to fly airships: not more than six months where the holder is of the male sex and not more than four months where the holder is of the female sex.

(3) Pilot's licence to fly balloons, or navigator's licence: not more than twenty-four months.

84A. In this Section unless the context otherwise requires—

"Public transport aircraft" means aircraft carrying passengers or goods for hire or reward or, in a case where the carriage is effected by an air transport undertaking, whether for hire or reward or not, and the expressions "public transport flying machine" and "public transport balloon" shall be construed accordingly:

"Aerial work aircraft" means aircraft, not being public transport aircraft, which are being used for any commercial or industrial purpose or any lucrative purpose, and the expressions "aerial work flying machine" and "aerial work balloon" shall be construed accordingly:

"Private aircraft" means aircraft other than public transport or aerial work aircraft, and the expressions "private flying machine" and "private balloon" shall be construed accordingly.

### B. Medical Requirements

#### *General*

85. A person applying for the grant or renewal of a licence will be required to undergo medical examination in accordance with the provisions of paragraphs 89-93.

Provided that where the application is for the renewal of a licence or the applicant has previously been found medically fit for flying, certain relaxations of the requirements set out in paragraph 93 may be made at the discretion of the Secretary of State.

Provided also that if an applicant for the renewal of a licence is for the time being on duty as an operative member of the crew of an aircraft in a region distant from official medical centres, the medical examination which he should normally pass to obtain renewal of the licence may exceptionally, at the discretion of the Secretary of State—

(a) Be deferred once for a period of six months in the case of a member of the operative crew of a private aircraft;

(b) Be deferred for two consecutive periods of three months each in the case of a member of the operative crew of an aircraft engaged in public transport or aerial work, on condition that the applicant obtains locally on each occasion a satisfactory medical certificate after having been examined by a qualified medical officer.

86. Every applicant who presents himself for medical examination for the issue or renewal of a licence will be required to furnish to the medical examiner a declaration signed by him stating whether he has previously undergone such a medical examination and if so with what result. A false declaration may entail the cancellation of any licence issued or renewed to him as the result of the examination.

87.—(1) If the holder of a licence—  
 (a) Meets with an accident in the performance of the duties for which he is licensed, or  
 (b) Meets with an accident otherwise occurring and involving incapacity for work during twenty days or more, or  
 (c) Suffers from an illness involving incapacity for work during twenty days or more,  
 he shall be re-examined and pronounced fit before resuming the duties for which he is licensed.

(2) Whenever any holder of a licence has performed a total of 125 hours' flying in the capacity of pilot of a flying machine within any period of thirty consecutive days since his last medical examination under these directions, he shall be re-examined and pronounced fit before resuming air duties.

(3) The medical examinations required for the purpose of this paragraph shall conform to the same conditions as in the case of an application for renewal of the licence.

88. The date and result of each examination, whether for the purpose of renewal of the licence or as required under paragraph 87, will be recorded on the licence and also any period during which the validity of the licence has been suspended.

*Pilots' Licences for Private Flying Machines, Pilots' Licences for Balloons, Pilots' Licences (First Class) for Airships, and Navigators' Licences*

89.—(1) In the case of a pilot's licence to fly private flying machines, a pilot's licence to fly balloons or a pilot's licence (first class) to fly airships, the medical examination shall be carried out by a duly qualified medical practitioner, who may be the applicant's usual medical attendant. It shall be conducted in accordance with C.A. Form 61 and a copy of that form completed as required shall be forwarded by the medical examiner to the Secretary (D.C.A.), Air Ministry, London, W.C.2 (by whom copies of the form will be supplied on application).

(2) In the case of a navigator's licence, the medical examination shall be conducted by a specially qualified medical officer appointed by or acting under the authority of the Secretary of State. Applications for examination should be made to the Secretary (D.C.A.), Air Ministry, London, W.C.2.

90. The examination will be based upon the following requirements of mental and physical fitness—

(a) Good family and personal history, with particular reference to nervous stability, as to which information shall be given in a statement made and signed by the applicant and satisfactory to the medical examiner.

(b) *General Surgical Examination.* The applicant must neither suffer from any wound or injury, nor have undergone any operation, nor possess any abnormality, congenital or acquired, which, in the case of an applicant for a pilot's licence, might interfere with the safe handling of aircraft under ordinary conditions, or, in the case of an applicant for a navigator's licence, might interfere with the performance of his duties.

Palpation of the abdomen and abdominal viscera, particularly the pyloric, vesicular, duodenal and appendicular regions, whenever it reveals any swelling or distinct pain, must be completed by a radioscopic and radio-graphic examination.

Any anatomical lesion of the walls of any part whatever of the digestive tube, any stricture of its calibre, any calculus or foreign body, any peritoneal lesion, established by clinical or laboratory examinations, will entail rejection. Exception may be made for spasmotic strictures not accompanied by other troubles and for ptoses compensated by a good abdominal musculature.

Any applicant who has undergone a surgical intervention on the biliary passages or the digestive tube, except appendicitis, involving a total or partial excision or a diversion of any of these organs, shall be declared unfit unless a period of two years has elapsed since the surgical intervention and the effects of the intervention are not deemed liable to cause sudden incapacity in the air, or unless a surgeon having knowledge of the nature of the disease which necessitated the intervention certifies that no immediate or future consequences are to be feared.

Diseases of the liver (including those of the biliary passages) and of the pancreas will in cases where it is deemed necessary be verified by laboratory examination, particularly by radiography as well as by an examination of the blood and of the urine, and will entail rejection only if they afford indication of the existence of a calculus, tumour or lesion involving a persistent impairment of function of these organs.

(c) *General Medical Examination.* The applicant must not suffer from any disease or disability which, in the case of an applicant for a pilot's licence, renders him liable suddenly to become incompetent in the management of aircraft, or, in the case of an applicant for a navigator's licence, might interfere with the performance of his duties. He must possess heart, lungs and nervous system in a state to withstand the effects of altitude. He must be free from kidney disease, and must not present any clinical sign of syphilis, nor have any cardiac lesion.

(d) *Eyes Examination.* The applicant must possess a degree of visual acuity compatible with the efficient performance of his duties. Binocular vision, ocular poise, the field of vision of each eye and colour perception must be normal.

Pilots must possess, with correction by glasses if necessary, visual acuity equal to at least 80 per cent of the normal visual acuity for each eye taken separately, or 90 per cent for one eye and 70 per cent for the other, the visual acuity being measured by means of standard test types powerfully illuminated in such a manner that the light does not shine directly into the eyes of the examinee.

Navigators must possess the same visual acuity, but without correction by glasses.

(e) *Ear Examination.* The middle ear must be healthy. The applicant must possess an auditory acuity not less than that corresponding with the perception of the whispered voice at one metre. The vestibular mechanism must be intact and not hypersensitive; it must be equal on both sides.

(f) *Nose, Throat and Mouth Examination.* The applicant must possess free tubal air entry on both sides.

Provided, however, that a person who does not satisfy the above requirements may, at the discretion of the Secretary of State, be accepted as eligible for the issue of a pilot's licence to fly private flying machines, so far as medical requirements are concerned, if the licence is to be restricted to flying in Great Britain and Northern Ireland.

#### *Pilots' Licences to fly Public Transport or Aerial Work Flying Machines, and Pilots' Licences (Second and Third Class) to fly Airships*

91. In the case of a pilot's licence to fly public transport or aerial work flying machines, or of a pilot's licence (second or third class) to fly airships, the medical examination shall be conducted by specially qualified medical officers appointed by or acting under the authority of the Secretary of State.

Applications for medical examination should be made to the Secretary (D.C.A.), Air Ministry, London, W.C.2.

92. The applicant must fulfil the following general requirements—

He must have the complete use of his four limbs, must not be completely deprived of the use of either eye and must be free from any active or latent, acute or chronic, medical or surgical, disability, or infection. He must be free from any injury or wound which would entail any degree of functional incapacity which might interfere with the safe handling of aircraft at any altitude even in the case of prolonged or difficult flight. He must be completely free from hernia, must not suffer from any detectable sensory lesion, and must be free from a history of morbid mental or nervous trouble.

93. The examination will also be based on the following requirements of medical and physical fitness—

(a) The applicant will be questioned concerning his family and personal history.

(b) *Examination of the Nervous System.* The examination of the nervous system of the applicant shall comprise a full inquiry into family and personal history. The information obtained shall be given in a statement made and signed by the applicant and accompanied, if possible, by a certificate in regard especially to losses of consciousness, fits and convulsions of all kinds, from the applicant's usual medical attendant or a responsible person who has known him for a long time. This statement and this certificate must be deemed satisfactory by the examining medical officer.

The applicant must not present any mental or trophic impairment, pathological tremor, or presumptive evidence of latent epilepsy. Motility, sensibility, tendinous, cutaneous, and pupillary reflexes, co-ordination of movements and cerebellar functions, must be normal. An exception may be made for local peripheral trouble due to accidental section of a nerve branch.

Fractures of the cranium involving the internal table of the cranial box, even without apparent impairment, will entail temporary unfitness during a period of two years from the date of the fracture.

Any presumed nervous syphilis will entail rejection, unless the non-existence of such an impairment is proved by an examination of the blood and an examination of the cerebro-spinal fluid, made with the consent of the applicant.

(c) *General Surgical Examination.* The applicant must neither suffer from any wound or injury, nor have undergone any operation, nor possess any abnormality, congenital or acquired, which might interfere with the safe handling of flying machines or airships, as the case may be, at any altitude, even in the case of prolonged or difficult flight.

Palpation of the abdomen and abdominal viscera, particularly the pyloric, vesicular, duodenal and appendicular regions, whenever it reveals any swelling or distinct pain, must be completed by a radioscopic and radiographic examination.

Any anatomical lesion of the walls of any part whatever of the digestive tube, any stricture of its calibre, any calculus or foreign body, any peritoneal lesion, established by clinical or laboratory examinations, will entail rejection. Exception may be made for spasmodic strictures not accompanied by other troubles and for ptoses compensated by a good abdominal musculature.

Any applicant who has undergone a surgical intervention on the biliary passages or the digestive tube, except appendicitis, involving a total or partial excision or a diversion of any of these organs, shall be declared unfit unless a period of two years has elapsed since the surgical intervention and the effects of the intervention are not deemed liable to cause sudden incapacity in the air, or unless a surgeon having knowledge of the nature of the disease which necessitated the intervention certifies that no immediate or future consequences are to be feared.

## AIR NAVIGATION DIRECTIONS

Diseases of the liver (including those of the biliary passages) and of the pancreas will in cases where it is deemed necessary be verified by laboratory examination, particularly by radiography as well as by an examination of the blood and of the urine, and will entail rejection only if they afford indication of the existence of a calculus, tumour or lesion involving a persistent impairment of function of these organs.

(d) *General Medical Examination.* The applicant must not suffer from any disease or disability which renders him liable suddenly to become incompetent in the management of flying machines or airships, as the case may be. His muscular power must be adequate for the handling of the types of aircraft he will have to pilot or the apparatus he is to use.

He must not have any signs or aneurism of the large arterial trunks, nor have any cardiac lesion, even if well compensated; the heart must be normal, with normal function, and only respiratory arrhythmia, increase of pulse rate from excitement or exercise and a general slow pulse not associated with auriculo-ventricular dissociation will be allowed.

The applicant must not suffer from any acute disability of the lungs, nor possess any cicatrical lesion of the lungs, and must be free from tuberculosis capable of being diagnosed by the usual clinical methods, from tracheobronchial disease of the glands, and from pulmonary emphysema, even if slight. In addition, each examination shall include a radioscopic record in doubtful clinical cases.

The applicant must not present any signs of organic disease of the kidneys; these latter must be insensitive to palpation and of normal size. Rental ptosis will entail rejection. The urine must not contain any pathological element. Affections of the urinary passages and of the genital organs, even blennorrhoea, may entail temporary or definitive unfitness.

Applicants of the female sex must present a normal uterus and appendages. Cases in which surgical intervention has taken place will be considered individually. Any presumed pregnancy will entail rejection.

The applicant must not present any clinical signs of syphilis.

Dysentery shall be considered as an acute disease; provided that a presumption of dysenteric infection shall entail rejection, unless the medical examiner considers that the clinical phenomena have disappeared.

(e) *Eye Examination.* The applicant must possess a degree of visual acuity compatible with the efficient performance of his duties. Binocular vision, ocular poise, the field of vision of each eye and colour perception must be normal.

He must possess, without correction by glasses, visual acuity equal to at least 80 per cent of the normal visual acuity for each eye taken separately, or 90 per cent for one eye and 70 per cent for the other, the visual acuity being measured by means of standard test types powerfully illuminated in such a manner that the light does not shine directly into the eyes of the examinee.

(f) *Ear Examination.* The middle ear must be healthy. The applicant must possess an auditory acuity not less than that corresponding with the normal perception of 64 vibrations per second, 256 vibrations per second and 4,096 vibrations per second, the forks of the tuning fork being held perpendicularly to the ground one centimetre from the auditory tube. The vestibular mechanism must be intact and not hypersensitive; it must be equal on both sides.

(g) *Nose, Throat and Mouth Examination.* The applicant must possess free nasal and tubal air entry on both sides and must not suffer from serious, acute or chronic affections of the buccal cavity or upper respiratory tract.

### C. Proof of Competency

97. With reference to paragraphs 3, 4, 5, and 6, of Schedule V to the Order, the proofs of competency required in the case of a person applying for a

licence as pilot shall (subject as hereinafter provided) consist of his having passed to the satisfaction of the Secretary of State the respective tests and examinations specified in paragraphs 98 to 107 below,<sup>1</sup> and the proofs of competency required in the case of a person applying for a licence as navigator shall be as specified in paragraph 108 below.

#### PILOTS OF FLYING MACHINES

##### *Pilot's Licence for Private Flying Machines ("A" Licence)*

98. The tests and examination for a pilot's licence to fly flying machines other than public transport or aerial work flying machines shall be as follows—

(1) *Practical Tests.* In each practical test the candidate must be alone in the flying machine.

(a) Test for altitude and gliding flight: a flight which shall finish with a glide; to carry out the glide the candidate must at a height of not less than 2,000 feet above the landing or alighting area either cut off or completely throttle down the engine or engines. The landing shall be made without restarting the engine or engines, or without reopening the throttles, and within 150 yards of a point fixed beforehand by the official examiners of the test.

(b) Tests of skill: A flight without landing around two posts (or buoys) situated 500 yards apart, making a series of five figure-of-eight turns, each turn reaching one of the two posts (or buoys). This flight shall be made at an altitude of not more than 600 feet above the ground (or water) without touching the ground (or water). The landing shall be effected by—

(i) Finally shutting off the engine at latest when the aircraft touches the ground (or water).

(ii) Finally stopping the flying machine within a distance of 50 yards from a point fixed by the candidate before starting.

(2) *Technical Examination.* (a) Knowledge of rules as to lights and signals, general rules for air traffic, and special rules for air traffic on and in the vicinity of aerodromes open to public use.

(b) A practical knowledge of international air legislation.

(c) A general knowledge of, in so far as they affect the responsibilities of a pilot, the Order, the Directions issued thereunder, and the Notices to Airmen issued by the Air Ministry.

Provided that, for the purpose of the grant of such licences—

(a) Persons who are qualified as Royal Air Force Pilots may be exempted from the above practical tests.

(b) A Royal Aero Club Certificate, if issued within a period of two years preceding the date of the application for the licence, may be accepted in lieu of the passing both of the above practical tests and of the above technical examination.

##### *Pilot's Licence for Public Transport or Aerial Work Flying Machines ("B" Licence)*

99. The tests and examination for a pilot's licence to fly public transport or aerial work flying machines shall be as follows—

(1) *Practical Tests.* In each practical test, except as otherwise specified, the candidate must be alone in the flying machine.

(a) The same tests as are required under (1) (a) and (b) of paragraph 98 for a private pilot's licence. Candidates already in possession of the latter licence, or of a Royal Aero Club Certificate issued within a period of two years preceding the date of the application for the "B" Licence are not, however, required to pass these tests again.

(b) A left-hand and right-hand spin.

(c) Two cross-country or oversea flights of at least 200 miles each.

<sup>1</sup> As regards flying experience, see paragraphs 104 to 106.

As regards one of these, the flight shall be made in the same aircraft within eight hours, shall include two obligatory landings (when the machine must come to rest at points, other than the point of departure, fixed beforehand by the examiners) and shall terminate with a landing at the point of departure. During this flight a height of at least 6,500 feet shall be maintained for one hour.

As regards both flights the candidate will at the time of departure be informed of his course and furnished with the appropriate map. The examiners will decide whether the course has been correctly followed.

(d) A cross-country or oversea flight of at least 200 miles with an examiner on board and including three forced landings at points selected by the examiner.<sup>1</sup>

(e) General flying for about half an hour with an examiner on board and including five landings.<sup>1</sup>

(f) A night flight of at least thirty minutes made between two hours after sunset and two hours before sunrise at a height of at least 1,500 feet.

The aircraft will be required to be equipped with landing lights (lamps or wing-top flares) of an approved type.

This test must be carried out on a dark night, the markings of the aerodrome and its surroundings being in normal operation during the flight.

(g) A flight in the course of which the candidate, under the supervision of a properly accredited examiner, must without exterior view maintain correctly during thirty minutes his line of flight and carry out ordinary manoeuvres by the sole use of the instruments on board.

(h) A candidate who desires a licence permitting him to fly a type of flying machine equipped with two or more engines will be required to undergo a practical test of his ability to fly and manoeuvre such a machine with each engine in turn completely throttled down.

(2) *Technical Examination.* Theoretical knowledge must refer particularly to the types of flying machines which the candidate desires to be authorized to pilot as well as to the types of engines with which such flying machines are equipped.

(a) Flying machines: Theoretical knowledge of the laws of the resistance of the air especially as concerns its effects on the main plane structure, tail units and airscrews; functions of the different parts of the flying machine and of their controls.

Assembling of flying machines and different parts.

Practical tests on rigging.

(b) Engines: General knowledge of internal combustion engines, and their various functions; valve gear, carburation, ignition, exhaust.

Characteristics of aero engines and a general knowledge of their construction, adjustment and assembling.

Causes of the faulty running of engines. Fuel and oils. Description of the details of the aero-engines used. Adjustments, lubrication, upkeep, disassembling and assembling of the principal parts; causes of breakdown. Use of throttle and other controls.

Practical tests in running repairs.

(c) Knowledge of instruments prescribed for flying machines.

(d) Knowledge of rules as to lights and signals, general rules for air traffic, and special rules for air traffic on and in the vicinity of aerodromes open to public use.

Practical knowledge of the special conditions of air traffic and of international air legislation.

A general knowledge of, in so far as they affect the responsibilities of a pilot, the Order, the Directions issued thereunder, and the Notices to Airmen issued by the Air Ministry.

<sup>1</sup> For tests (d) and (e) the flying machine will be provided by the Secretary of State.

(e) Map reading, measurement of distances, calculation of courses, compensation of compasses for deviation and method of determining drift, elementary meteorology.

Provided that, for the purpose of the grant of such licences, persons who are qualified as Royal Air Force Pilots may be exempted from the above tests and examination, except as regards the subjects of the examination, specified in (d) and (e). Such exemption may be made conditional upon the satisfactory completion of a special flying test.

#### *General*

100. The practical tests specified in paragraphs 98 and 99 respectively shall be carried out within a maximum period of two months except the practical tests specified in (d) and (e) of paragraph 99 (1), which shall be carried out at such time and under such arrangements as the Secretary of State may require.

They may be carried out in any order. They shall be witnessed by properly accredited examiners who will hand over the official reports to the proper authorities.

The practical tests specified in paragraph 98 may be attempted twice during the course of an official flying test. A candidate who fails in any of the practical tests specified in paragraph 99 (1) will be required to carry out a further official flying test, but will be exempted from any part of such a test passed at the first attempt, subject to the provision in the first sentence of this paragraph. In accordance with paragraph 6B of Schedule VI to the Order, a reduction may be made in the fee for an official flying test in respect of any part of such a test from which a candidate is so exempted.

The official reports will give full details of the flights, especially of the landings. The candidates shall furnish, before each test, proof of identity, which the examiners have the right to demand.

A barograph shall be carried on all practical tests except those specified in paragraph 99 (1) (b), (d), (e), and (g), and the graph signed by the examiners shall be attached to their report.

### PILOTS OF BALLOONS

#### *Pilot's Licence for Private Balloons*

101. The tests and examination for a pilot's licence to fly balloons other than public transport or aerial work balloons shall be as follows.

(1) *Practical Tests.* The candidate must have completed the following certified ascents—

- (i) By day: 3 ascents under instruction.  
1 ascent in control under supervision.  
1 ascent alone in the balloon.

(ii) By night: 1 ascent alone in the balloon.

Each ascent shall be of at least two hour's duration.

(2) *Technical Examination.* (a) Elementary aerostatics and meteorology.

(b) General knowledge of a balloon and its accessories; inflation; rigging; management of an ascent; instruments; precautions against cold and high altitudes.

(c) Map reading and use of compass. Knowledge of rules as to lights and signals, general rules for air traffic, and special rules for air traffic on and in the vicinity of aerodromes open to public use.

(d) Practical knowledge of international air legislation.

Provided that, for the purpose of the grant of such licences—

(i) Persons who are qualified as Royal Air Force Kite Balloon Officers or Royal Air Force Airship Pilots may be exempted from the above tests and examination except as regards the examination subjects specified in (c) and (d).

(ii) A certificate issued by any body approved for the purpose may be accepted in lieu of the passing of the above examination if the Secretary of State is satisfied that the qualifications required for the issue of such certificate were at least equivalent to the passing of such examination.

*Pilot's Licence for Public Transport or Aerial Work Balloons*

102. The tests and examination for a pilot's licence to fly balloons carrying passengers or goods for hire or reward or being flown for any industrial purpose shall be as follows—

(1) *Practical Tests.* The practical tests are the same as those required for a private pilot's licence. Candidates already in possession of the latter licence are not required to pass the practical tests again.

(2) *Technical Examination.* (a) Aerostatics and meteorology.

(b) Physical chemical properties of light gases and of materials used in the construction of balloons.

(c) Elementary navigation ; use of compass ; location of position.

(d) General knowledge of a balloon and its accessories ; inflation ; stowage ; management of an ascent ; instruments ; precautions against cold and high altitudes.

(e) Knowledge of rules as to lights and signals, general rules for air traffic, and special rules for air traffic on and in the vicinity of aerodromes open to public use.

(f) Practical knowledge of international air legislation.

(3) The following additional tests and examination will be required in the case of licences covering the flying of fixed balloons—

*Practical Tests.* The candidate must have completed six certified ascents on different days in sole control of a fixed balloon and have carried out satisfactorily the management from the ground of three ascents and descents of a fixed balloon on different days (which may, however, be days on which some of the six certified ascents in sole control are carried out).

*Technical Examination.* (a) General knowledge of a fixed balloon of the type for which the licence is required ; accessories ; inflation ; rigging ; valve adjustments ; management of an ascent ; instruments.

(b) General knowledge of winches and cables.

Provided that persons who are qualified as Royal Air Force Kite Balloon Officers or Royal Air Force Airship Pilots may be exempted from the above tests and examinations, except as regards the examination subjects specified in (e) and (f) of sub-paragraph (2).

AIRSHIP PILOTS

*General*

103. There shall be three classes of airship pilot's licences.

The holder of a third class licence is qualified to command any airship of less capacity than 200,000 cubic feet.

The holder of a second class licence is qualified to command any airship of less capacity than 700,000 cubic feet.

The holder of a first class licence is qualified to command any airship.

104. A candidate for a pilot's licence to fly airships must be the holder of a pilot's licence to fly balloons and of a navigator's licence.

*Third Class Licence*

105. The tests and examination for a third class licence shall be as follows—

(1) *Practical Tests.* (a) Twenty certified flights (three of which shall be by night) in an airship, each flight being of at least one hour's duration. On at

least four of these flights the candidate must have handled the airship himself under the supervision of the commanding officer of the airship, including departure and landing, during the whole flight if the duration thereof does not exceed four hours, and during at least four hours if the flight is of longer duration.

(b) One flight on a predetermined course of at least 70 miles, terminating with a night landing, and made with a duly authorized inspector on board.

(2) *Technical Examination.* (a) Aerostatics. Density of gases, laws of Mariotte and of Guy-Lussac; barometric pressure, Archimedes principle; confinement of gases.

(b) Physical and chemical properties of light gases, and of materials used in the construction of airships.

(c) General theory of airships.

(d) Dynamic properties of moving bodies in air.

(e) Elementary knowledge of internal combustion engines.

(f) Inflation; stowage; rigging; handling; controls and instruments.

Provided that persons who are qualified as Royal Air Force Airship Pilots may be exempted from the tests and examination for a third class licence.

#### *Second Class Licence*

106. The tests and examination for a second class licence shall be as follows—

(1) *Practical Tests.* To be eligible for a second class licence a candidate must be a holder of a third class licence and have at least four months' service as a third class pilot on an airship, and also have completed at least 10 flights as third class pilot in an airship of capacity above 200,000 cubic feet, on which he has handled the airship himself, including departure and landing, under the supervision of the commanding officer of the airship, during the whole flight if the duration thereof does not exceed four hours, and during at least four hours if the flight is of longer duration.

(2) *Technical Examination.* Advanced knowledge of the subjects required for a third class licence.

#### *First Class Licence*

107. The tests and examination for the first class licence shall be as follows—

(1) *Practical Tests.* To be eligible for a first class licence a candidate must be holder of a second class licence, have at least two months' service as a second class pilot on an airship, and also have completed at least five flights as second class pilot of an airship of greater capacity than 700,000 cubic feet, on which he has handled the airship himself, including departure and landing, under the supervision of the commanding officer of the airship, during the whole flight if the duration thereof does not exceed four hours, and during at least four hours if the flight is of longer duration. Each flight must be at least of one hour's duration with a minimum of 15 hours for the five flights.

(2) *Technical Examination.* As stated above for a second class licence.

Provided that persons who are qualified as Royal Air Force Airship Pilots and have commanded airships of greater capacity than 200,000 cubic feet, may be exempted from the tests and examination for a first class licence except as regards the examination subjects specified in (h) and (i) of paragraph 105 (2).

#### NAVIGATORS

108. (1) There shall be two classes of licences to navigate aircraft.

(2) A candidate for a second class licence to navigate aircraft will be required to produce proofs of competency in the practice and theory of the subjects specified in Schedule A below. He will also be required to produce proof of having had at least two years' air experience, during which at least 300 hours must have been spent in the air.

(3) A candidate for a first class licence to navigate aircraft will be required to produce proofs of competency in the practice and theory of the subjects

specified in Schedule B below. He will also be required to produce proof of having had at least four years' air experience, during which at least 600 hours must have been spent in the air, not less than 100 hours of this being experience of navigation in the air, of which not less than 15 hours shall have been obtained in connection with cross-country flights made between two hours after sunset and two hours before sunrise.

(4) In this paragraph the expression "air experience" means experience as an operative member of the crew of an aircraft.

#### *Schedule A*

- (i) Form of the earth; its divisions and their notation; mathematical calculation of the various elements by plane trigonometry to obtain course and distance.
- (ii) Maps and charts; how to read and use them; practical properties of the common forms of projections.
- (iii) Compasses; their construction, use, and adjustment; elementary principles of earth's magnetism.
- (iv) Flight by dead reckoning; with the use of instruments for the measurement and calculation of the elements of the triangle of velocities.
- (v) Navigation by radiogoniometry; methods of fixing the position of an aircraft, with the application of the necessary corrections.
- (vi) International air legislation; regulations for the prevention of collisions at sea; publications for the assistance of navigators.
- (vii) Signalling; semaphore, flashing, and international code flags.
- (viii) Meteorology; knowledge of meteorological elements and observations; arrangements for the issue of meteorological reports for aviation; principles of forecasting; construction and interpretation of synoptic charts; climatology.

#### *Schedule B*

- (i) Form of the earth; as in Schedule A (i) with the addition of mathematical calculation of various elements by spherical trigonometry (great circle courses and distances).
- (ii) Maps and charts; as in Schedule A (ii) with the addition of the principles of construction of the common forms of projections.
- (iii) Tides; elementary theory and prediction by the aid of tables.
- (iv) Compasses, as in Schedule A (iii); more advanced knowledge.
- (v) Flight by dead reckoning, as in Schedule A (iv).
- (vi) Navigation by radiogoniometry as in Schedule A (v).
- (vii) International air legislation, etc., as in Schedule A (vi).
- (viii) Signalling, as in Schedule A (viii).
- (ix) Astronomical navigation; various methods of fixing the position of an aircraft, with the use and care of tables, diagrams, and instruments for the solution of this problem; knowledge of the mathematics involved.
- (x) Meteorology as in Schedule A (viii); more advanced knowledge.

NOTE. The arrangements of subjects in Schedules A and B above is not necessarily that adopted in the examination where two or more subjects may be grouped into one paper.

#### D. Flying Experience, etc.

109. As regards Pilots' Licences for private flying machines—

(a) An applicant for the issue of a licence will be required to produce satisfactory evidence that he has carried out not less than three hours' solo flying during the twelve months preceding the date of the application. The evidence normally required for this purpose will consist of the production of a Pilot's Log Book recording such flying, or of a certificate issued by a responsible authority or person approved for the purpose by the Secretary of State.

(b) An applicant for the renewal of a licence will be required to produce in respect of the preceding twelve months the same evidence as is mentioned in sub-paragraph (a), or in default thereof to carry out satisfactorily the following practical flying tests under the observation of an official observer appointed by the Royal Aero Club, or of some person approved for the purpose.

(i) To execute three figure-of-eight turns, and

(ii) To carry out three landings, finally stopping the aircraft on each occasion within a distance of 50 yards from a point fixed by the applicant before starting.

110. As regards pilot's licences for public transport or aerial work flying machines—

(a) The maximum period for which an applicant for the issue or renewal of a licence may not have flown but yet may be considered to have recent reasonable flying experience is six months.

(b) An applicant for the issue of a licence will be required to produce proof that, during the preceding two years, he has carried out as pilot in sole charge of a flying machine at least 100 hours' flying and at least 30 landings. Persons who are qualified as Royal Air Force Pilots may, however, be exempted from this requirement if they have passed the practical tests specified in (d) and (e) of paragraph 99 (1) and, if required, that specified in (f) of that paragraph.

(c) A licence will be granted only for such types of flying machines as the applicant can produce evidence of his ability to fly. A licence may, however, be extended to cover further types on production of evidence of the holder's ability to fly those types.

(d) An applicant for the renewal of a licence will be required to produce proof of recent reasonable flying experience on the class of flying machines for which the renewal is required, or, failing such proof, to undergo practical tests.

111. As regards pilots' licences for public transport or aerial work balloons—

(a) The maximum period for which an applicant for the issue or renewal of a licence may not have flown, but yet may be considered to have recent flying experience is twelve months.

(b) An applicant for the issue of a licence will be required to produce proof that he has carried out, in sole control of the balloon, ten flights each of which must have been of at least two hours' duration.

(c) An applicant for the renewal of a licence will be required to produce proof of recent reasonable flying experience, or, failing such proof, to undergo practical tests.

112. With reference to proviso (b) to Art. 3 (1) of the Order and proviso (c) to Art. 4 (1) thereof, a flying machine may be flown by a person not holding a pilot's licence for flying machines for the purpose of becoming eligible for the issue of such a licence, provided that the person is not under the age of seventeen years and that the following conditions are complied with—

(i) The flight must start from, take place within three miles of, and finish at, a licensed aerodrome, a Royal Air Force aerodrome, or an aerodrome under the control of the Secretary of State;

(ii) Before the flight is commenced, notice that it is being undertaken for the purpose stated above must be given to the person in charge of the aerodrome from which the flight starts.

(iii) No passengers may be carried.

### SECTION XIII. MASTER PILOT'S CERTIFICATES (FLYING MACHINES)

113. With reference to paragraph 5A of Schedule V to the Order, applications for the issue of master pilot's certificates for flying machines should be made to the Secretary (D.C.A.), Air Ministry, London, W.C.2, by whom application forms will be supplied on demand.

114. Master pilot's certificates will be issued either for flying machines or for marine flying machines.

115. The qualifications required in order to obtain a master pilot's certificate are as follows—

(1) The applicant (a) must be the holder of a current pilot's licence to fly public transport or aerial work flying machines ("B licence") issued under the Order, (b) must have held such a licence for at least five years, and (c) during those five years must have flown for at least 1,000 hours as pilot of civil aircraft.

(2) His flying experience as pilot must have included—

(i) 200 flying hours on either (a) single-engined flying machines of at least 300 horse-power, or (b) multi-engined flying machines, but so that at least 100 hours shall have been on multi-engined machines, and also so that the 200 hours shall have been wholly on land flying machines or wholly on marine flying machines according as to whether the application is for a certificate for land or for marine flying machines; and

(ii) Twenty cross-country or oversea flights, each of a minimum duration of one hour and both commenced and completed at night.

(3) He must be the holder of a current second class or first class licence to navigate aircraft issued under the Order.

116. In place of any of the above qualifications the Secretary of State may accept other qualifications which appear to him to be substantially equivalent.

117. A master pilot's certificate will not require to be renewed.

#### SECTION XIV. AUTHORITY TO GIVE INSTRUCTION IN FLYING

118. With reference to Article A9 of the Order, applications for authority to give instruction in flying should be made to the Secretary (D.C.A.) Air Ministry, London, W.C.2., by whom copies of application forms will be supplied on request.

119. Applicants for such authority will be required to have passed an examination (which may include practical tests) held by the Secretary of State, or approved by him for the purpose. Particulars of such examinations may be obtained from the Secretary (D.C.A.), Air Ministry, London, W.C.2.

120. Authority to give instruction in flying will not be granted if the Secretary of State is not satisfied that the applicant is a fit and proper person to be granted such authority.

#### SECTION XV. LICENSED AERODROMES

121. With reference to Article 7 of the Order, applications for aerodrome licences should be made to the Secretary (D.C.A.), Air Ministry, London, W.C.2., by whom application forms will be supplied on demand.

122. Licensed aerodromes are divided into two main categories—

(a) Aerodromes licensed for use only by the licensee and by individuals specifically authorized by him.

(b) Aerodromes licensed for public use.

123. Aerodromes are licensed either for all types of aircraft or for certain specified types.

124. An aerodrome licence may be granted for any period up to a maximum of twelve months, and on each occasion of renewal, may be renewed for a period not exceeding twelve months.

125. The licensee shall obtain before any work is commenced, the approval of the Secretary of State to any proposed alterations and additions to a site for which an aerodrome licence has been granted, where such alterations or additions may affect the safety of aircraft using the aerodrome.

In particular, where it is proposed to erect buildings or structures, or alter the area of ground occupied by and/or the height above ground of existing buildings or structures, a plan on a scale of 1/2500 shall be rendered to the Secretary (C.A.2), Air Ministry, clearly indicating the new area occupied, or the alteration of area, if any, together with full particulars of the height above ground of each such new or altered building or structure. Failure to obtain such approval will render the licence liable to be withdrawn.

126. Adequate first-aid appliances must be kept at all licensed aerodromes.

#### SECTION XVI. DROPPING OF ARTICLES FROM AIRCRAFT

127. With reference to Article 13 of the Order—

(a) Chemical substances dropped for the purpose of dusting or spraying crops from aircraft flying within Great Britain and Northern Ireland shall be dropped only from aircraft which comply with the following conditions—

(i) The aircraft shall be equipped with appliances or apparatus suitable for the operation of dusting or spraying crops.

(ii) The classification of the aircraft on its certificate of airworthiness, as provided in paragraphs 37 to 41 above, shall be such as permits the use of the aircraft for the purpose of dusting or spraying crops.

(b) The dropping of the following articles is permitted—

(i) Smoke-producing or other apparatus or material dropped for the purpose of navigating an aircraft, where the approval of the Secretary of State to the type of apparatus and method of use has previously been notified.

(ii) Message bags and apparatus for dropping articles to the ground, and articles so dropped, where the approval of the Secretary of State to the type of apparatus, method of use, and place where the dropping is to take place, has been notified, and subject to any other conditions which may be laid down.

#### SECTION XVII. GENERAL

128. In these Directions, unless the context otherwise requires—

“Secretary of State” includes, in relation to any purpose of these Directions, any person authorized by the Secretary of State for that purpose.

“Approved” means approved by the Secretary of State.

129. A reference in any document to these Directions or to any provisions thereof shall, unless the context otherwise requires, be construed as referring to these Directions as amended by any subsequent Directions for the time being in force.

130. These Directions may be cited as the Air Navigation Directions, 1932 (A.N.D.11).

131. These Directions, except in so far as expressly stated, shall come into operation on 1st October, 1932.

# APPENDIX IV

## CARRIAGE BY AIR ACT, 1932

### SCHEDULES

#### FIRST SCHEDULE

##### CONVENTION FOR THE UNIFICATION OF CERTAIN RULES RELATING TO INTERNATIONAL CARRIAGE BY AIR

*Signed at Warsaw on the 12th October, 1929*

#### CHAPTER I

##### SCOPE—DEFINITIONS

ART. 1.—(1) This Convention applies to all international carriage of persons, luggage or goods performed by aircraft for reward. It applies equally to gratuitous carriage by aircraft performed by an air transport undertaking.

(2) For the purpose of this Convention the expression "international carriage" means any carriage in which, according to the contract made by the parties, the place of departure and the place of destination, whether or not there be a break in the carriage or a transhipment, are situated either within the territories of two High Contracting Parties, or within the territory of a single High Contracting Party, if there is an agreed stopping place within a territory subject to the sovereignty, suzerainty, mandate or authority of another Power, even though that Power is not a party to this Convention. A carriage without such an agreed stopping place between territories subject to the sovereignty, suzerainty, mandate or authority of the same High Contracting Party is not deemed to be international for the purposes of this Convention.

(3) A carriage to be performed by several successive air carriers is deemed, for the purpose of this Convention, to be one undivided carriage, if it has been regarded by the parties as a single operation, whether it had been agreed upon under the form of a single contract or of a series of contracts, and it does not lose its international character merely because one contract or a series of contracts is to be performed entirely within a territory subject to the sovereignty, suzerainty, mandate or authority of the same High Contracting Party.

ART. 2.—(1) This Convention applies to carriage performed by the State or by legally constituted public bodies provided it falls within the conditions laid down in Article 1.

(2) This Convention does not apply to carriage performed under the terms of any international postal Convention.

## CHAPTER II

### DOCUMENTS OF CARRIAGE

#### SECTION 1.—PASSENGER TICKET

ART. 3.—(1) For the carriage of passengers the carrier must deliver a passenger ticket which shall contain the following particulars—

- (a) The place and date of issue;
- (b) The place of departure and of destination;
- (c) The agreed stopping places, provided that the carrier may reserve the right to alter the stopping places in case of necessity, and that if he exercises that right, the alteration shall not have the effect of depriving the carriage of its international character;
- (d) The name and address of the carrier or carriers;
- (e) A statement that the carriage is subject to the rules relating to liability established by this Convention.
- (2) The absence, irregularity or loss of the passenger ticket does not affect the existence or the validity of the contract of carriage, which shall none the less be subject to the rules of this Convention. Nevertheless, if the carrier accepts a passenger without a passenger ticket having been delivered he shall not be entitled to avail himself of those provisions of this Convention which exclude or limit his liability.

#### SECTION 2.—LUGGAGE TICKET

ART. 4.—(1) For the carriage of luggage, other than small personal objects of which the passenger takes charge himself, the carrier must deliver a luggage ticket.

- (2) The luggage ticket shall be made out in duplicate, one part for the passenger and the other part for the carrier.
- (3) The luggage ticket shall contain the following particulars—
  - (a) The place and date of issue;
  - (b) The place of departure and of destination;
  - (c) The name and address of the carrier or carriers;
  - (d) The number of the passenger ticket;
  - (e) A statement that delivery of the luggage will be made to the bearer of the luggage ticket;
  - (f) The number and weight of the packages;
  - (g) The amount of the value declared in accordance with Article 22 (2);
  - (h) A statement that the carriage is subject to the rules relating to liability established by this Convention.
- (4) The absence, irregularity or loss of the luggage ticket does not affect the existence or the validity of the contract of carriage, which shall none the less be subject to the rules of this Convention. Nevertheless, if the carrier accepts luggage without a luggage ticket having been delivered, or if the luggage ticket does not contain the particulars set out at (d), (f) and (h) above, the carrier shall not be entitled to avail himself of those provisions of the Convention which exclude or limit his liability.

#### SECTION 3.—AIR CONSIGNMENT NOTE

ART. 5.—(1) Every carrier of goods has the right to require the consignor to make out and hand over to him a document called an "air consignment note"; every consignor has the right to require the carrier to accept this document.

## CARRIAGE BY AIR ACT, 1932

(2) The absence, irregularity or loss of this document does not affect the existence or the validity of the contract of carriage which shall, subject to the provision of Article 9, be none the less governed by the rules of this Convention.

ART. 6.—(1) The air consignment note shall be made out by the consignor in three original parts and be handed over with the goods.

(2) The first part shall be marked "for the carrier," and shall be signed by the consignor. The second part shall be marked "for the consignee"; it shall be signed by the consignor and by the carrier and shall accompany the goods. The third part shall be signed by the carrier and handed by him to the consignor after the goods have been accepted.

(3) The carrier shall sign on acceptance of the goods.

(4) The signature of the carrier may be stamped; that of the consignor may be printed or stamped.

(5) If, at the request of the consignor, the carrier makes out the air consignment note, he shall be deemed, subject to proof to the contrary, to have done so on behalf of the consignor.

ART. 7. The carrier of goods has the right to require the consignor to make out separate consignment notes when there is more than one package.

ART. 8. The air consignment note shall contain the following particulars—

(a) The place and date of its execution;  
(b) The place of departure and of destination;  
(c) The agreed stopping places, provided that the carrier may reserve the right to alter the stopping places in case of necessity, and that if he exercises that right the alteration shall not have the effect of depriving the carriage of its international character;

(d) The name and address of the consignor;  
(e) The name and address of the first carrier;  
(f) The name and address of the consignee, if the case so requires;

(g) The nature of the goods;  
(h) The number of the packages, the method of packing and the particular marks or numbers upon them;

(i) The weight, the quantity and the volume or dimensions of the goods;

(j) The apparent condition of the goods and of the packing;  
(k) The freight, if it has been agreed upon, the date and place of payment, and the person who is to pay it;

(l) If the goods are sent for payment on delivery, the price of the goods, and, if the case so requires, the amount of the expenses incurred;

(m) The amount of the value declared in accordance with Article 22 (2);

(n) The number of parts of the air consignment note;  
(o) The documents handed to the carrier to accompany the air consignment note;

(p) The time fixed for the completion of the carriage and a brief note of the route to be followed, if these matters have been agreed upon;

(q) A statement that the carriage is subject to the rules relating to liability established by this Convention.

ART. 9. If the carrier accepts goods without an air consignment note having been made out, or if the air consignment note does not contain all the particulars set out in Article 8 (a) to (i) inclusive and

(g), the carrier shall not be entitled to avail himself of the provisions of this Convention which exclude or limit his liability.

ART. 10.—(1) The consignor is responsible for the correctness of the particulars and statements relating to the goods which he inserts in the air consignment note.

(2) The consignor will be liable for all damage suffered by the carrier or any other person by reason of the irregularity, incorrectness or incompleteness of the said particulars and statements.

ART. 11.—(1) The air consignment note is *prima facie* evidence of the conclusion of the contract, of the receipt of the goods and of the conditions of carriage.

(2) The statements in the air consignment note relating to the weight, dimensions and packing of the goods, as well as those relating to the number of packages, are *prima facie* evidence of the facts stated; those relating to the quantity, volume and condition of the goods do not constitute evidence against the carrier except so far as they both have been, and are stated in the air consignment note to have been, checked by him in the presence of the consignor, or relate to the apparent condition of the goods.

ART. 12.—(1) Subject to his liability to carry out all his obligations under the contract of carriage, the consignor has the right to dispose of the goods by withdrawing them at the aerodrome of departure or destination, or by stopping them in the course of the journey on any landing, or by calling for them to be delivered at the place of destination or in the course of the journey to a person other than the consignee named in the air consignment note, or by requiring them to be returned to the aerodrome of departure. He must not exercise this right of disposition in such a way as to prejudice the carrier or other consignors and he must repay any expenses occasioned by the exercise of this right.

(2) If it is impossible to carry out the orders of the consignor the carrier must so inform him forthwith.

(3) If the carrier obeys the orders of the consignor for the disposition of the goods without requiring the production of the part of the air consignment note delivered to the latter, he will be liable, without prejudice to his right of recovery from the consignor, for any damage which may be caused thereby to any person who is lawfully in possession of that part of the air consignment note.

(4) The right conferred on the consignor ceases at the moment when that of the consignee begins in accordance with Article 13.

Nevertheless, if the consignee declines to accept the consignment note of the goods, or if he cannot be communicated with, the consignor resumes his right of disposition.

ART. 13.—(1) Except in the circumstances set out in the preceding Article, the consignee is entitled, on arrival of the goods at the place of destination, to require the carrier to hand over to him the air consignment note and to deliver the goods to him, on payment of the charges due and on complying with the conditions of carriage set out in the air consignment note.

(2) Unless it is otherwise agreed, it is the duty of the carrier to give notice to the consignee as soon as the goods arrive.

(3) If the carrier admits the loss of the goods, or if the goods have not arrived at the expiration of seven days after the date on which they ought to have arrived, the consignee is entitled to put into force against the carrier the rights which flow from the contract of carriage.

ART. 14. The consignor and the consignee can respectively enforce all the rights given them by Articles 12 and 13, each in his own name, whether he is acting in his own interest or in the interest of another, provided that he carries out the obligations imposed by the contract.

ART. 15.—(1) Articles 12, 13 and 14 do not affect either the relations of the consignor or the consignee with each other or the mutual relations of third parties whose rights are derived either from the consignor or from the consignee.

(2) The provisions of Articles 12, 13 and 14 can only be varied by express provision in the air consignment note.

ART. 16.—(1) The consignor must furnish such information and attach to the air consignment note such documents as are necessary to meet the formalities of customs, octroi or police before the goods can be delivered to the consignee. The consignor is liable to the carrier for any damage occasioned by the absence, insufficiency or irregularity of any such information or documents, unless the damage is due to the fault of the carrier or his agents.

(2) The carrier is under no obligation to enquire into the correctness or sufficiency of such information or documents.

### CHAPTER III LIABILITY OF THE CARRIER

ART. 17. The carrier is liable for damage sustained in the event of the death or wounding of a passenger or any other bodily injury suffered by a passenger, if the accident which caused the damage so sustained took place on board the aircraft or in the course of any of the operations of embarking or disembarking.

ART. 18.—(1) The carrier is liable for damage sustained in the event of the destruction or loss of, or of damage to, any registered luggage or any goods, if the occurrence which caused the damage so sustained took place during the carriage by air.

(2) The carriage by air within the meaning of the preceding paragraph comprises the period during which the luggage or goods are in charge of the carrier, whether in an aerodrome or on board an aircraft, or, in the case of a landing outside an aerodrome, in any place whatsoever.

(3) The period of the carriage by air does not extend to any carriage by land, by sea or by river performed outside an aerodrome. If, however, such a carriage takes place in the performance of a contract for carriage by air, for the purpose of loading, delivery or trans-shipment, any damage is presumed, subject to proof to the contrary, to have been the result of an event which took place during the carriage by air.

ART. 19. The carrier is liable for damage occasioned by delay in the carriage by air of passengers, luggage or goods.

ART. 20. (1) The carrier is not liable if he proves that he and his agents have taken all necessary measures to avoid the damage or that it was impossible for him or them to take such measures.

(2) In the carriage of goods and luggage the carrier is not liable if he proves that the damage was occasioned by negligent pilotage or negligence in the handling of the aircraft or in navigation and that, in all other respects, he and his agents have taken all necessary measures to avoid the damage.

ART. 21. If the carrier proves that the damage was caused by or contributed to by the negligence of the injured person the Court

may, in accordance with the provisions of its own law, exonerate the carrier wholly or partly from his liability.

ART. 22.—(1) In the carriage of passengers the liability of the carrier for each passenger is limited to the sum of 125,000 francs. Where, in accordance with the law of the Court seised of the case, damages may be awarded in the form of periodical payments, the equivalent capital value of the said payments shall not exceed 125,000 francs. Nevertheless, by special contract, the carrier and the passenger may agree to a higher limit of liability.

(2) In the carriage of registered luggage and of goods, the liability of the carrier is limited to a sum of 250 francs per kilogram, unless the consignor has made, at the time when the package was handed over to the carrier, a special declaration of the value at delivery and has paid a supplementary sum if the case so requires. In that case the carrier will be liable to pay a sum not exceeding the declared sum, unless he proves that that sum is greater than the actual value to the consignor at delivery.

(3) As regards objects of which the passenger takes charge himself the liability of the carrier is limited to 5,000 francs per passenger.

(4) The sums mentioned above shall be deemed to refer to the French franc consisting of 65½ milligrams gold of millesimal fineness 900. These sums may be converted into any national currency in round figures.

ART. 23. Any provision tending to relieve the carrier of liability or to fix a lower limit than that which is laid down in this Convention shall be null and void, but the nullity of any such provision does not involve the nullity of the whole contract, which shall remain subject to the provisions of this Convention.

ART. 24.—(1) In the cases covered by Articles 18 and 19 any action for damages, however founded, can only be brought subject to the conditions and limits set out in this Convention.

(2) In the cases covered by Article 17 the provisions of the preceding paragraph also apply, without prejudice to the questions as to who are the persons who have the right to bring suit and what are their respective rights.

ART. 25.—(1) The carrier shall not be entitled to avail himself of the provisions of this Convention which exclude or limit his liability, if the damage is caused by his wilful misconduct or by such default on his part as, in accordance with the law of the Court seised of the case, is considered to be equivalent to wilful misconduct.

(2) Similarly the carrier shall not be entitled to avail himself of the said provisions, if the damage is caused as aforesaid by any agent of the carrier acting within the scope of his employment.

ART. 26.—(1) Receipt by the person entitled to delivery of luggage or goods without complaint is *prima facie* evidence that the same have been delivered in good condition and in accordance with the document of carriage.

(2) In the case of damage, the person entitled to delivery must complain to the carrier forthwith after the discovery of the damage, and, at the latest, within three days from the date of receipt in the case of luggage and seven days from the date of receipt in the case of goods. In the case of delay the complaint must be made at the latest within fourteen days from the date on which the luggage or goods have been placed at his disposal.

(3) Every complaint must be made in writing upon the document of carriage or by separate notice in writing despatched within the times aforesaid.

(4) Failing complaint within the times aforesaid, no action shall lie against the carrier, save in the case of fraud on his part.

ART. 27. In the case of the death of the person liable, an action for damages lies in accordance with the terms of this Convention against those legally representing his estate.

ART. 28.—(1) An action for damages must be brought, at the option of the plaintiff, in the territory of one of the High Contracting Parties, either before the Court having jurisdiction where the carrier is ordinarily resident, or has his principal place of business, or has an establishment by which the contract has been made or before the Court having jurisdiction at the place of destination.

(2) Questions of procedure shall be governed by the law of the Court seised of the case.

ART. 29.—(1) The right to damages shall be extinguished if an action is not brought within two years, reckoned from the date of arrival at the destination, or from the date on which the aircraft ought to have arrived, or from the date on which the carriage stopped.

(2) The method of calculating the period of limitation shall be determined by the law of the Court seised of the case.

ART. 30.—(1) In the case of carriage to be performed by various successive carriers and falling within the definition set out in the third paragraph of Article 1, each carrier who accepts passengers, luggage or goods is subjected to the rules set out in this Convention, and is deemed to be one of the contracting parties to the contract of carriage in so far as the contract deals with that part of the carriage which is performed under his supervision.

(2) In the case of carriage of this nature, the passenger or his representative can take action only against the carrier who performed the carriage during which the accident or the delay occurred, save in the case where, by express agreement, the first carrier has assumed liability for the whole journey.

(3) As regards luggage or goods, the passenger or consignor will have a right of action against the first carrier, and the passenger or consignee who is entitled to delivery will have a right of action against the last carrier, and further, each may take action against the carrier who performed the carriage during which the destruction, loss, damage or delay took place. These carriers will be jointly and severally liable to the passenger or to the consignor or consignee.

#### CHAPTER IV PROVISIONS RELATING TO COMBINED CARRIAGE

ART. 31.—(1) In the case of combined carriage performed partly by air and partly by any other mode of carriage, the provisions of this Convention apply only to the carriage by air, provided that the carriage by air fall within the terms of Article 1.

(2) Nothing in this Convention shall prevent the parties in the case of combined carriage from inserting in the document of air carriage conditions relating to other modes of carriage, provided that the provisions of this Convention are observed as regards the carriage by air.

#### CHAPTER V GENERAL AND FINAL PROVISIONS

ART. 32. Any clause contained in the contract and all special agreements entered into before the damage occurred by which the parties purport to infringe the rules laid down by this Convention, whether by deciding the law to be applied, or by altering the rules

as to jurisdiction, shall be null and void. Nevertheless for the carriage of goods arbitration clauses are allowed, subject to this Convention, if the arbitration is to take place within one of the jurisdictions referred to in the first paragraph of Article 28.

ART. 33. Nothing contained in this Convention shall prevent the carrier either from refusing to enter into any contract of carriage, or from making regulations which do not conflict with the provisions of this Convention.

ART. 34. This Convention does not apply to international carriage by air performed by way of experimental trial by air navigation undertakings with the view to the establishment of a regular line of air navigation, nor does it apply to carriage performed in extraordinary circumstances outside the normal scope of an air carrier's business.

ART. 35. The expression "days" when used in this Convention means current days, not working days.

ART. 36. The Convention is drawn up in French in a single copy which shall remain deposited in the archives of the Ministry for Foreign Affairs of Poland and of which one duly certified copy shall be sent by the Polish Government to the Government of each of the High Contracting Parties.

ART. 37. (1) This Convention shall be ratified. The instruments of ratification shall be deposited in the archives of the Ministry for Foreign Affairs of Poland, which will notify the deposit to the Government of each of the High Contracting Parties.

(2) As soon as this Convention shall have been ratified by five of the High Contracting Parties it shall come into force as between them on the ninetieth day after the deposit of the fifth ratification. Thereafter it shall come into force between the High Contracting Parties who shall have ratified and the High Contracting Party who deposits his instrument of ratification on the ninetieth day after the deposit.

(3) It shall be the duty of the Government of the Republic of Poland to notify to the Government of each of the High Contracting Parties the date on which this Convention comes into force as well as the date of the deposit of each ratification.

ART. 38.—(1) This Convention shall, after it has come into force, remain open for accession by any State.

(2) The accession shall be effected by a notification addressed to the Government of the Republic of Poland, which will inform the Government of each of the High Contracting Parties thereof.

(3) The accession shall take effect as from the ninetieth day after the notification made to the Government of the Republic of Poland.

ART. 39.—(1) Any one of the High Contracting Parties may denounce this Convention by a notification addressed to the Government of the Republic of Poland, which will at once inform the Government of each of the High Contracting Parties.

(2) Denunciation shall take effect six months after the notification of denunciation, and shall operate only as regards the Party who shall have proceeded to denunciation.

ART. 40.—(1) Any High Contracting Party may, at the time of signature or of deposit of ratification or of accession, declare that the acceptance which he gives to this Convention does not apply to all or any of his colonies, protectorates, territories under mandate, or any other territory subject to his sovereignty or his authority, or any territory under his suzerainty.

(2) Accordingly any High Contracting Party may subsequently accede separately in the name of all or any of his colonies, protectorates, territories under mandate or any other territory subject to

his sovereignty or to his authority or any territory under his suzerainty which has been thus excluded by his original declaration.

(3) Any High Contracting Party may denounce this Convention, in accordance with its provisions, separately or for all or any of his colonies, protectorates, territories under mandate or any other territory subject to his sovereignty or to his authority, or any other territory under his suzerainty.

ART. 41. Any High Contracting Party shall be entitled not earlier than two years after the coming into force of this Convention to call for the assembling of a new international Conference in order to consider any improvements which may be made in this Convention. To this end he will communicate with the Government of the French Republic which will take the necessary measure to make preparations for such Conference.

This Convention done at Warsaw on the 12th October, 1929, shall remain open for signature until the 31st January, 1930.

[*Here follow the signatures on behalf of the following countries—*

Germany, Austria, Belgium, Brazil, Denmark, Spain, France, Great Britain and Northern Ireland, the Commonwealth of Australia, the Union of South Africa, Greece, Italy, Japan, Latvia, Luxembourg, Norway, the Netherlands, Poland, Romania, Switzerland, Czechoslovakia, the Union of Soviet Socialist Republics, and Jugoslavia.]

#### ADDITIONAL PROTOCOL

(*With reference to Article 2*)

The High Contracting Parties reserve to themselves the right to declare at the time of ratification of accession that the first paragraph of Article 2 of this Convention shall not apply to international carriage by air performed directly by the State, its colonies, protectorates or mandated territories or by any other territory under its sovereignty, suzerainty or authority.

[*This additional Protocol was signed on behalf of the same countries as those above mentioned.*]

#### SECOND SCHEDULE

##### PROVISIONS AS TO LIABILITY OF CARRIER IN THE EVENT OF THE DEATH OF A PASSENGER

1. The liability shall be enforceable for the benefit of such of the members of the passenger's family as sustained damage by reason of his death.

In this paragraph the expression "member of a family" means wife or husband, parent, step-parent, grandparent, brother, sister, half-brother, half-sister, child, step-child, grandchild:

Provided that, in deducing any such relationship as aforesaid, any illegitimate person and any adopted person shall be treated as being, or as having been, the legitimate child of his mother and reputed father or, as the case may be, of his adopters.

2. An action to enforce the liability may be brought by the personal representative of the passenger or by any person for whose benefit the liability is under the last preceding paragraph enforceable, but only one action shall be brought in the United Kingdom in respect of the death of any one passenger, and every such action by whomsoever brought shall be for the benefit of all such persons so entitled as aforesaid as either are domiciled in the United Kingdom or, not being domiciled there, express a desire to take the benefit of the action.

3. Subject to the provisions of the next succeeding paragraph, the amount recovered in any such action, after deducting any costs not recovered from the defendant, shall be divided between the persons entitled in such proportions as the Court (or, where the action is tried with a jury, the jury) direct.

4. The Court before which any such action is brought may at any stage of the proceedings make any such order as appears to the Court to be just and equitable in view of the provisions of the First Schedule to this Act limiting the liability of a carrier and of any proceedings which have been, or are likely to be, commenced outside the United Kingdom in respect of the death of the passenger in question.

The following countries had ratified the Convention up to the end of 1935—

Germany, U.S.A., Brazil, Danzig, Spain,<sup>1</sup> France,<sup>1</sup> Great Britain and Northern Ireland, India, Italy,<sup>1</sup> Lettland, Liechtenstein, Mexico, Netherlands,<sup>2</sup> Poland, South Rhodesia, Romania, Switzerland, Czechoslovakia, U.S.S.R., Yugoslavia.

<sup>1</sup> Includes Colonies, Protectorates and Mandated Territories.

<sup>2</sup> Includes Netherlands Indies.

## APPENDIX V

### SANITARY CONVENTION, INTERNATIONAL, FOR AIR NAVIGATION.

THIS Convention was prepared by the International Office of Public Hygiene and opened for signature at The Hague on the 12th April, 1933.

It has now been ratified.

#### PART I

##### GENERAL PROVISIONS

ART. I. For the purposes of this Convention the High Contracting Parties adopt the following definitions—

I. The word *aircraft* includes any machine which can derive support in the atmosphere from the reactions of the air, and is intended for aerial navigation.

The present Convention applies only to aircraft—

(1) whose place of departure and place of final landing are situated on different territories;

(2) which, their place of departure and place of final landing being situated on the same territory, make an intermediate landing on a different territory;

(3) which fly without landing over more than one territory; whether these territories are placed under the sovereignty, suzerainty, mandate or authority of the same Power or of different Powers.

II. The words *authorized aerodrome* mean a customs or other aerodrome, specially designated by the competent authority of the State in which it is situated, on which aircraft may make their first landing on entering a territory or which they may make their place of departure on leaving a territory.

III. The words *sanitary aerodrome* denote an authorized aerodrome organized and equipped in accordance with the terms of Article 5 of this Convention, and designated as such by the competent authority of the country.

IV. The word *crew* includes any person having duties on board relative to the flying or the security of the flight of the aircraft or employed on board in some way or other in the service of the aircraft, the passengers, or the cargo.

V. The words *local area* (*circonscription*) denote a well-defined area, such as a province, a government, a district, a department, a canton, an island, a commune, a town, a quarter of a town, a village, a port, an agglomeration, etc., whatever may be the extent and population of such area. Under the conditions laid down in Article 8 of this Convention, an aerodrome may constitute a "local area."

VI. The word *observation* means the isolation of persons in a suitable place.

The word *surveillance* means that persons are not isolated, that they may move about freely, but that they are notified to the sanitary authorities of the several places whither they are bound and subjected to a medical examination with a view to ascertaining their state of health.

VII. The word *day* means an interval of 24 hours.

ART. 2. Whatever relates in the present Convention to aerodromes is to be understood to apply *mutatis mutandis* to places for the landing of hydroplanes (and similar craft) on water.

#### SECTION I.—AERODROMES IN GENERAL AND THEIR STAFF

ART. 3. Each High Contracting Party undertakes to provide on its authorized aerodromes a sanitary organization for the current needs of prophylaxis, which, as a minimum, shall consist of definite arrangements to ensure

the attendance of a medical practitioner, at such times as may be necessary, for the medical examinations envisaged by this Convention.

ART. 4. It rests with each High Contracting Party, taking into account the risks of infectious disease to which his territory may be exposed, to decide whether or not to establish sanitary aerodromes and which authorized aerodromes will be selected for this purpose.

ART. 5. The sanitary aerodrome should at all times have at its disposal—

(a) An organized medical service with one medical officer at least and one or more sanitary inspectors, it being understood that this personnel will not necessarily be in permanent attendance at the aerodrome.

(b) A place for medical inspection.

(c) Equipment for taking and dispatching suspected material for examination in a laboratory, if such examination cannot be made on the spot.

(d) Means by which to be able, in case of necessity, to isolate, transport and care for the sick, to isolate contacts separately from the sick and to carry out any other prophylactic measure in places suitable for the purpose within the aerodrome or in proximity to it.

(e) Apparatus necessary to undertake, if circumstances require, disinfection, disinsectization and deratization, and, in addition, any other measures laid down in this Convention.

The aerodrome shall be provided with a sufficient supply of wholesome drinking water, and with a proper and safe system for the removal of excreta and refuse, and for the disposal of liquid waste.

It shall be maintained, as far as possible, free from rats.

ART. 6. The medical officer of the aerodrome shall be an official of, or approved by, the competent sanitary authority.

ART. 8. A sanitary aerodrome, in order that it may be designated a local area (circonscription) for the purpose of notification of infectious disease and for other purposes of this Convention must be so organized that—

(1) The entry and exit of any person is under the supervision and control of the competent authority.

(2) In the case of a disease specified in Article 18 of this Convention occurring in the neighbourhood, access to the aerodrome by any route other than the air is forbidden to persons suspected to have been infected, and measures are applied to the satisfaction of the competent authority with a view to preventing persons who are resident in or passing through the aerodrome being exposed to the risk of infection, either by contact with persons outside or by any other means.

In order than an authorized aerodrome which is not also a sanitary aerodrome may likewise be designated a local area, it is necessary, in addition, that it shall be so situated, topographically, as to be beyond all probable risk of infection from without.

## SECTION II.—AIRCRAFT SANITARY DOCUMENTS

ART. 9. The following entries are to be made in the journey log book, under the heading "Observations"—

(1) Any facts of public health importance which have occurred on the aircraft in course of the voyage.

(2) Any sanitary measures undergone by the aircraft before departure or at places of call, in application of this Convention.

(3) If the case so requires, information concerning the appearance in the country from which the aircraft is departing of one of the infectious diseases mentioned in Part III of the present Convention. This entry is made with a view to facilitating medical examinations which passengers arriving in aerodromes in another country may be required to undergo.

For this purpose the Governments of non-infected countries in which one of the said diseases appears shall, in addition to other methods by which it is already required to inform other countries of the outbreak of such

diseases and their nature, transmit the necessary information to the competent authorities of each of its authorized aerodromes. The latter shall, on the departure of aircraft, enter the information in the journey log book for a period of fifteen days from the date on which the information was first received.

Aircraft shall not be required to carry Bills of Health. The entries in the journey log book made in accordance with the terms of this Article will be verified and certified free of charge by the competent authority of the aerodrome.

### SECTION III.—MERCANDISE AND MAIIS

ART. 10. Merchandise in aircraft may, in addition to the measures prescribed in Articles 25, 29, 33, 42, 44, 47, 49, and 51 of the present Convention, be subjected to those which are legally applicable in the country to merchandise imported by any means of conveyance.

ART. 11. Letters and correspondence, printed matter, books, newspapers, business documents, postal packages and anything sent by post shall not be subject to any sanitary measure unless they contain articles the subject of the conditions specified in Article 33 of this Convention.

## PART II

### SANITARY REGULATIONS GENERALLY APPLICABLE

ART. 12. In the case of sanitary or authorized aerodromes, the medical officer attached to the aerodrome has the right, on the departure or landing of aircraft, to make a visit for the sanitary inspection of travellers and crew, when circumstances justify this measure.

This visit should, however, be so arranged in relation to the other ordinary administrative and customs operations as to avoid any delay or interference with the continuation of the voyage. The visit should not be the subject of any tax.

Reservation is made of the right of the Sanitary and Maritime Quarantine Board of Egypt to levy taxes in accordance with its special powers.

ART. 13. The competent authority of any aerodrome may, on the advice of the medical officer attached to the aerodrome, prohibit the embarkation of persons with symptoms of infectious disease, except in the case of the transport of sick persons by aircraft specially allocated for the purpose.

In the absence of a medical officer the competent authority of the aerodrome may defer the departure of such persons until the advice of a doctor has been obtained with regard to them.

ART. 14. Aircraft in flight are forbidden to throw or to let fall matter capable of producing the outbreak of infectious disease.

ART. 15. If the commander of the aircraft wishes to disembark a sick person he shall, so far as he is able, notify the aerodrome of arrival in good time before landing.

ART. 16. If there is on board an aircraft a case of infectious disease duly verified by the aerodrome medical officer, which is not specified in Part III of this Convention, the usual measures in force of the country in which the aerodrome is situated shall be applied. The sick person may be landed and, if the competent sanitary authority considers it desirable, isolated in a suitable place; the other passengers and the crew will have the right to continue the voyage after medical inspection, and, if necessary, the carrying out of the appropriate sanitary measures.

Such of these sanitary measures as can be carried out at the aerodrome should be so arranged in relation to the administrative and customs operations that the aircraft may be detained as short a time as possible.

ART. 17. Save as is expressly provided for in the present Convention, aircraft shall be exempt from sanitary formalities both at the aerodromes of call and of final destination.

## PART III

## SANITARY REGULATIONS APPLICABLE IN THE CASE OF CERTAIN DISEASES

ART. 18. The diseases mentioned in this Part of the Convention as being the subject of the special measures herein referred to are plague, cholera, yellow fever, typhus, and smallpox.

ART. 19. The period of incubation for the purposes of this Convention is held to be 6 days in the case of plague, 5 days in the case of cholera, 6 days in the case of yellow fever, 12 days in the case of typhus, and 14 days in the case of smallpox.

ART. 20. The chief health authorities shall transmit to the sanitary and authorized aerodromes of their respective countries all information contained in the epidemiological notifications and communications received from the Office International d'Hygiène publique (and the Regional Bureaux with which it has made agreements for this purpose) in execution of the provisions of the International Sanitary Convention of 21st June, 1926, which may affect the exercise of sanitary control in those aerodromes.

ART. 21. The measures to which this Part of the Convention refers shall be considered as constituting a maximum within the limits of which the High Contracting Parties may regulate the procedure which may be applied to aircraft.

It rests with each High Contracting Party to determine whether measures should be applied, within the limits of this Convention, to arrivals from a foreign local area or aerodrome.

In this respect account will be taken, to the greatest extent possible, of information received, and of measures already applied, in conformity with the provisions of Article 54 below.

ART. 22.<sup>1</sup> For the purpose of this part of the Convention a local area is considered to be infected when it conforms to the conditions specified in the International Sanitary Convention of 21st June, 1926.

<sup>1</sup> According to the terms of the International Sanitary Convention of the 21st June, 1926, Article 10, and the first paragraph of Article 11, a local area is considered "infected" by one of the diseases in question, in the following circumstances: For plague and yellow fever a first case recognized as non-imported; for cholera when forming a foyer—that is when the occurrence of new cases outside the immediate surroundings of the first cases proves that the spread of the disease has not been limited to the place where it began; for typhus and smallpox when they exist in epidemic form.

## CHAPTER I

## MEASURES APPLICABLE IN THE CASE OF PLAGUE, CHOLERA, TYPHUS AND SMALLPOX

## SECTION I.—MEASURES ON DEPARTURE.

ART. 23. The measures to be applied on the departure of aircraft from a local area infected by one of the diseases mentioned in this Chapter are as follows—

(1) Thorough cleansing of the aircraft, especially the parts liable to be contaminated.

(2) Medical inspection of passengers and crew.

(3) Exclusion of any person showing symptoms of one of the diseases in question; as well as of persons in such close relation with the sick as to render them liable to transmit the infection of these diseases.

(4) Inspection of personal effects, which shall only be accepted if in a reasonable state of cleanliness.

(5) In the case of plague, deratization, if there is any reason to suspect the presence of rats on board.

(6) In the case of typhus, disinsectization, limited to persons who, after medical inspection, are considered as likely to convey infection and to their effects.

The documents carried on board shall be annotated in accordance with the requirements of Article 9.

## SECTION II.—MEASURES ON ARRIVAL

ART. 24. Aircraft, even when coming from a local area infected by one of the diseases to which this Chapter refers, may land on any authorized aerodrome. Nevertheless, each High Contracting Party, if epidemiological conditions demand such action, has the right to require aircraft coming from particular local areas to land at prescribed sanitary or authorized aerodromes, account being taken of the geographical position of those aerodromes and of the routes followed by the aircraft, in such a manner as to occasion no interference with aerial navigation.

The only measures applicable in these circumstances at authorized aerodromes which are not also sanitary aerodromes are the medical inspection of crew and passengers and the landing and isolation of the sick. Passengers and crew may not move beyond the limits prescribed by the aerodrome authority except with the permission of the visiting medical officer. This restriction may continue to be imposed on the aircraft at each landing place until it arrives at a sanitary aerodrome where it will be liable to the measures laid down in this chapter.

ART. 25. The commander of the aircraft is required, from the time of landing, to place himself at the disposal of the sanitary authority and to answer all requests for information of a public health nature which are made to him by the competent service, and to produce for examination the documents carried on board.

Should an aircraft, on entering a territory, land elsewhere than on a sanitary or authorized aerodrome, the commander of the aircraft shall, if the aircraft comes from an infected local area or is itself infected, notify the nearest local authority to this effect, and the latter will take such measures as are appropriate to the circumstances, being guided by the general principles on which this Convention is based, and will, if possible, direct the aircraft to a sanitary aerodrome. No cargo shall be unloaded and no passengers or member of the crew may leave the vicinity of the aircraft without the permission of the competent sanitary authority.

ART. 26. In the application of this Convention, surveillance must not be replaced by observation except—

(a) in circumstances in which it would not be practicable to carry it out with sufficient thoroughness; or

(b) if the risk of introduction of infection into the country is considered to be exceptionally serious; or

(c) if the person who would be subject to surveillance cannot furnish adequate sanitary guarantees.

Persons under observation or surveillance shall give facilities for all examinations which the competent sanitary authority considers necessary.

A. PLAGUE. ART. 27. If there has not been a case of plague on board, the only measures which can be prescribed are—

(1) Medical inspection of passengers and crew.

(2) Deratization and disinsectization in exceptional cases when they are considered necessary, and if they have not been done in the aerodrome of departure.

(3) The crew and passengers may be subjected to surveillance not to exceed six days from the date on which the aircraft left the infected local area.

ART. 28. If there is on board a recognized or suspected case of plague, the following measures are applicable—

(1) Medical inspection.

(2) The sick shall be immediately disembarked and isolated.

(3) All persons who have been in contact with the sick and those whom the sanitary authority has reasons to consider suspect, shall be subject to surveillance for a period not exceeding six days from the date of arrival of the aircraft.

(4) Personal effects, linen and any other articles, which in the opinion of the sanitary authority are infected, shall be disinsectized and, if necessary, disinfected.

(5) The parts of the aircraft suspected to be infected shall be disinsectized.

(6) The sanitary authority may carry out deratization in exceptional cases, if there is any reason to suspect the presence of rats on board and if the operation was not carried out on departure.

ART. 29. If the sanitary authority considers that merchandise coming from an area infected with plague can harbour rats or fleas, such merchandise may only be discharged on condition that the necessary precautions are taken.

B. CHOLERA. ART. 30. If there has not been a case of cholera on board, the only measures which may be prescribed are—

(1) Medical inspection of passengers and crew.

(2) Surveillance of passengers and crew for a period not exceeding five days from the date on which the aircraft left the infected local area.

ART. 31. If a case of disease presenting clinical signs of cholera appears on board during the voyage, the aircraft shall be subject at landing places or on arrival, to the following procedure—

(1) Medical inspection.

(2) The sick shall be immediately disembarked and isolated.

(3) The crew and passengers shall be kept under surveillance during a period not exceeding five days from the date of arrival of the aircraft.

(4) Personal effects, linen, and all other articles which in the opinion of the sanitary authority are infected, shall be disinfected.

(5) The parts of the aircraft which have been occupied by the sick or which are regarded as liable to have been contaminated shall be disinfected.

(6) When the drinking water on board is considered suspect, it shall be disinfected, and unless it is impracticable to do so, emptied out and replaced, after the disinfection of the reservoir, by wholesome water.

In countries in which investigation for the detection of carriers of the cholera vibrio is prescribed for their inhabitants, persons arriving by aircraft and who wish to remain in the country shall submit to the obligations imposed on the inhabitants in this respect.

ART. 32. Persons producing proof that they have been vaccinated against cholera within less than six months and more than six days, may only be subjected to surveillance.

Proof will be afforded by a written declaration signed by a doctor whose signature shall be officially legalized; or, failing such legalization, the declaration shall be countersigned by either—

(a) the medical officer appointed to a sanitary aerodrome; or

(b) a person, other than the person performing the inoculation, who is authorized to witness a passport application under the regulations of the country.

ART. 33. The unloading from aircraft of the following fresh goods: fish, shellfish, fruit and vegetables, coming from a local area infected with cholera, may be prohibited.

C. TYPHUS. ART. 34.—(A) If there has not been a case of typhus on board, no sanitary measure may be prescribed save the application of those prescribed in Article 52 of this Convention to persons who have within 12 days left a local area where typhus is epidemic.

(B) The following measures are applicable if there is a case of typhus on board—

- (1) Medical inspection.
- (2) The sick shall be immediately disembarked, isolated, and deloused.
- (3) Any person suspected of harbouring lice or having been exposed to infection shall also be deloused, and may be subjected to surveillance not exceeding 12 days, reckoned from the date of delousing.
- (4) Linen, personal effects, and other articles which the sanitary authority considers to have been recently contaminated, shall be disinsectized.

(5) The parts of the aircraft which have been occupied by persons ill with smallpox and which the sanitary authority regards as contaminated shall be disinsectized.

D. SMALLPOX. ART. 35.—(A) If there has not been a case of smallpox on board the only measures which may be prescribed are in the case of persons who have left within 14 days a "local area" where smallpox is epidemic and who, in the opinion of the sanitary authority, are not sufficiently immunized. Such persons may be subjected, without prejudice to the terms of Article 52, to vaccination, or to surveillance, or to vaccination, followed by surveillance, the period of which shall not exceed 14 days from the date of arrival of the aircraft.

(B) The following measures are applicable if there is a case of smallpox on board—

- (1) Medical inspection.
- (2) The sick shall be immediately disembarked and isolated.
- (3) Other persons whom there is reason to believe have been exposed to infection and who, in the opinion of the sanitary authority, are not sufficiently immunized may be subjected to the measures prescribed in paragraph (A) of this Article.

(4) Soiled linen, personal effects, and other articles which the sanitary authority considers to have been recently contaminated, shall be disinfected.

(5) The parts of the aircraft which have been occupied by persons ill with smallpox and which the sanitary authority regards as contaminated shall be disinfected.

For the purposes of this Article persons shall be considered immune—

(a) if they can produce proof of a previous attack of smallpox, or if they have been vaccinated within less than three years and more than 12 days; or

(b) if they show local signs of early reaction attesting an adequate immunity. Apart from cases where these signs are present, proof will be afforded by a written certificate of a doctor, authenticated in the manner prescribed in the second paragraph of Article 32.

## CHAPTER II

### MEASURES APPLICABLE IN THE CASE OF YELLOW FEVER

#### SECTION I.—GENERAL PROVISIONS

ART. 36. In territories where endemicity of yellow fever is suspected, the High Contracting Parties will take the necessary steps to ascertain whether yellow fever exists in their territory in a form not clinically recognizable, but which can be revealed by biological examination.

ART. 37. Independently of the notification of cases of and circumstances relating to recognized cases of yellow fever as laid down in Articles 1, 2, 3, 4, 5, and 8 of the International Sanitary Convention of the 21st June, 1926, each High Contracting Party undertakes to notify immediately to other High Contracting Parties and at the same time to the Office International d'Hygiène Publique (either directly or indirectly through the Regional Bureaux with which it has made agreements for this purpose) the discovery in its territory of the actual existence of yellow fever in the above-mentioned form.

SECTION II.—PROVISIONS IN RESPECT OF REGIONS IN WHICH  
YELLOW FEVER IS DISCOVERED OR EXISTS ENDEMICALY

ART. 38. Notwithstanding Article 4 of this Convention, and subject to the terms of Article 46 hereafter, every aerodrome which receives aircraft to which Article 1, I, second paragraph, applies, and which is situated in a region (part of a territory) in which yellow fever exists in a form clinically or biologically recognizable, shall be a sanitary aerodrome as defined in this Convention, and, in addition, it shall be—

- (1) Situated at an adequate distance from the nearest inhabited centre.
- (2) Provided with arrangements for a water supply which shall be completely protected against mosquitoes, and be kept as free as possible from mosquitoes by systematic measures for the suppression of breeding places and for the destruction of the insects in all stages of growth.
- (3) Provided with mosquito-proofed dwellings for the crews of aircraft and for the staff of the aerodrome.
- (4) Provided with a mosquito-proofed dwelling in which passengers can be accommodated or retained in hospital when it is necessary to apply the measures specified in Articles 42 and 44 below.

ART. 39. If, in the region where yellow fever has been discovered or exists in an endemic form, there is not already an aerodrome fulfilling the conditions specified in the preceding Article, all aerial navigation from this region to another territory shall be suspended until such aerodrome has been established.

ART. 40. Every aerodrome established and equipped in accordance with the provisions of Article 38 above shall be called an "anti-amaryl aerodrome," and shall be regarded as a separate local area. The creation of such an aerodrome shall be notified by the High Contracting Party in whose territory it is situated to the other High Contracting Parties, and either to the Office International d'Hygiène Publique or to the International Commission for Air Navigation, under the conditions laid down in Article 7. Following this notification, the declaration of the presence of yellow fever in an adjacent town or village, or in another local area, will not apply to the aerodrome, and that aerodrome shall not be declared infected unless yellow fever occurs among the persons residing therein.

ART. 41. If an "anti-amaryl aerodrome" becomes an infected local area, aerial navigation from that aerodrome to any other territory shall be discontinued until all measures have been taken to free it from infection, and all risk of the spread of yellow fever has ceased.

ART. 42. Where the "anti-amaryl aerodrome" is not infected, but yellow fever exists in the region, the following measures will be taken on the departure, or, in any event, as soon as possible before the departure, of an aircraft—

- (1) Inspection of the aircraft and cargo to ensure that they do not contain mosquitoes, and, if necessary, disinsectization. A record of this inspection and any action taken shall be entered in the journey log book.
- (2) Medical inspection of passengers and crew; those who are suspected to be suffering from yellow fever or who it has been duly established have been exposed to the infection of yellow fever, will be required to remain under observation either within the precincts of the aerodrome, or elsewhere under conditions approved by the sanitary authority, until six days have elapsed since the last day on which they were exposed to infection.

- (3) The names of the passengers and crew shall be entered in the journey log book, as well as the relevant information, and the period and conditions of observation they have undergone prior to departure.

ART. 43. Aircraft in transit, not coming from a region in which yellow fever exists and landing for the purpose of refuelling in an "anti-amaryl aerodrome," are exempt from the prescribed sanitary measures on leaving that aerodrome. In the further course of the voyage they will not be subject

to the provisions of this chapter provided the fact that they have called at an "anti-amaryl aerodrome" for the sole purpose of refuelling is entered in the journey log book.

ART. 44. Aircraft to which Article I, I, second paragraph of the present Convention applies, flying between two regions where yellow fever exists must depart from and land at an "anti-amaryl aerodrome" in these regions. Passengers, crew, and cargo may not be disembarked or embarked except at an "anti-amaryl aerodrome."

En route between these aerodromes aircraft may land for refuelling in any aerodrome not situated within a region where yellow fever exists.

The measures to be taken on arrival at the "anti-amaryl aerodrome" are the following—

(1) Inspection of the aircraft and cargo to ensure that they do not contain mosquitoes, and, if necessary, disinsectization.

(2) Medical examination of passengers and crew to ascertain that they are free from symptoms of yellow fever.

If a person is suspected to be suffering from yellow fever or if it has not been established to the satisfaction of the sanitary authority of the aerodrome of arrival that a person has completed a period of six days since possible exposure to infection, he may be subjected to observation either within the precincts of the aerodrome, or elsewhere under conditions approved by the sanitary authority, for a period not exceeding six days reckoned from the last day on which that person could have been infected.

ART. 45. Aircraft having departed from an "anti-amaryl aerodrome" in a region where yellow fever exists and arriving at a region where yellow fever does not exist, shall comply with the provisions of Sections III and IV below.

ART. 46. For the purposes of local aerial navigation, nothing in this section shall be deemed to prevent the Governments of neighbouring territories in which yellow fever is found or exists endemically from establishing or employing, by mutual agreement, aerodromes which are not "anti-amaryl aerodromes," for the needs of aerial navigation exclusively between these territories.

### SECTION III.—PROVISIONS IN RESPECT OF TERRITORIES OR REGIONS IN WHICH YELLOW FEVER DOES NOT EXIST, BUT IN WHICH THERE ARE CONDITIONS WHICH PERMIT OF ITS DEVELOPMENT

ART. 47. In territories or regions where yellow fever does not exist, but where there are conditions which permit of its development, the measures which may be taken on the arrival of an aircraft at a sanitary aerodrome are the following—

(1) Inspection of aircraft and cargo to ensure that they do not contain mosquitoes, and, if necessary, disinsectization.

(2) Medical examination of passengers and crew to ascertain that they are free from symptoms of yellow fever.

If a person is suspected to be suffering from yellow fever, or if it has not been established to the satisfaction of the sanitary authority of the aerodrome that a person has completed a period of six days since possible exposure to infection, he may be subjected to observation either within the precincts of the aerodrome, or elsewhere under conditions approved by the sanitary authority, for a period not to exceed six days reckoned from the last day on which that person could have been infected.

ART. 48. The High Contracting Parties undertake, save in exceptional circumstances which will require to be justified, not to invoke sanitary reasons for prohibiting the landing in the territories referred to in Article 47 of aircraft coming from regions where yellow fever does exist, on condition that the provisions of Section II of this chapter, particularly those concerning the measures to be taken on departure, are observed.

ART. 49. Nevertheless, the High Contracting Parties may designate particular sanitary aerodromes as those at which aircraft from territories where yellow fever exists shall land for the purpose of disembarking passengers, crew, or cargo.

#### SECTION IV.—PROVISIONS IN RESPECT OF TERRITORIES OR REGIONS WHERE THE CONDITIONS DO NOT PERMIT OF THE DEVELOPMENT OF YELLOW FEVER

ART. 50. In territories or regions where the conditions do not permit of the development of yellow fever, aircraft coming from regions where yellow fever exists may land at any sanitary or authorized aerodrome.

ART. 51. The measures to be taken on arrival are the following—

- (1) Inspection of the aircraft and cargo to ensure that they do not contain mosquitoes, and, if necessary, disinsectization.
- (2) Medical inspection of passengers and crew.

### CHAPTER III GENERAL PROVISIONS

ART. 52. Persons who arrive in aircraft in the territory of any High Contracting Party and who have been exposed to risk of infection by one of the diseases referred to in Article 18 of this Convention, and who are within the period of incubation, may, subject to the provisions of Chapter II of this Part, be submitted to surveillance until the termination of that period.

In the case of cholera and smallpox, the provisions of Articles 32 and 35 relating to immunized persons shall equally apply to action under this Article.

ART. 53. Persons who, on arrival at an aerodrome, are considered under the terms of this Part liable to surveillance up to the expiration of the period of incubation of the disease, may nevertheless continue the voyage on condition that the fact is notified to the authorities of subsequent landing places and of arrival, either by means of an entry in the journey log book as prescribed in Article 9 of this Convention, or by some other method sufficient to secure that they can be subjected to medical inspection in any subsequent aerodrome on the route.

In the case of diseases other than yellow fever and until the expiration of the period of incubation, persons who are liable to observation under the terms of Articles 26, 44 (fourth paragraph) and 47 (second paragraph) of this Convention, may only be authorized to continue their voyage with the approval of the sanitary authorities of the place of their destination.

ART. 54. In regard to sanitary measures to be applied to an aircraft coming from an infected local area, the sanitary authority of every aerodrome will, to the greatest possible extent, take into account all action which has already been imposed on the aircraft in another sanitary aerodrome abroad or in the same country and which is duly noted in the journey log book as required by Article 9 of this Convention.

Aircraft coming from an infected "local area" which have already been subjected to satisfactory sanitary measures shall not be subjected to these measures a second time on arrival in another aerodrome, whether the latter belongs to the same country or not, provided that since then no incident has occurred which calls for the application of the sanitary measures in question, and that the aircraft has not, except to take in fuel, called at an infected aerodrome.

ART. 55. The authority of the aerodrome which applies sanitary measures shall, whenever requested, furnish free of charge to the commander of the aircraft, or any other interested person, a certificate specifying the nature of the measures and the methods employed, the parts of the aircraft treated, and the reason why the measures have been applied.

It shall also issue, on demand and without charge, to passengers arriving by aircraft in which a case of one of the infectious diseases referred to in Article 18 has occurred, certificates showing the date of their arrival and the measures to which they and their luggage have been subjected.

ART. 56. Save as expressly provided in this Convention, aircraft shall not be detained for sanitary reasons.

If an aircraft has been occupied by a person suffering from plague, cholera, yellow fever, typhus or smallpox, the detention shall be limited to the period strictly necessary for it to undergo the prophylactic measures applicable to the aircraft in the case of each disease referred to in this Convention.

ART. 57. Subject to the provisions of Chapter II of this Convention and particularly those of Article 47, any aircraft which does not wish to submit to the measures prescribed by the aerodrome authority in virtue of the provisions of this Convention, is at liberty to continue its voyage. It may not however land in another aerodrome of the same country except for purposes of refuelling. An aircraft may be authorized to land goods on condition that it is isolated and that the goods are subjected, if necessary, to the measures laid down in Article 10 of this Convention. Aircraft may also be authorized to disembark passengers at their request, on the condition that such passengers submit to the measures prescribed by the sanitary authority.

Aircraft may also take in fuel, replacements, food and water while remaining in isolation.

1. The International Sanitary Convention for Aerial Navigation, which was signed at The Hague on 12th April, 1933, entered into force on 1st August, 1935, in respect of—

Australia	Iraq
Bolivia	Monaco
Brazil	Morocco
Egypt	Sudan
Great Britain and Northern Ireland <i>(see para. 2 below)</i>	Syria and the Lebanon
Holland	Tunisia
Austria	31st August, 1935
Germany	24th August, 1935
Poland	24th October, 1935
Turkey	14th November, 1935

2. The Convention also became effective as from 1st August, 1935, in the case of the following colonies, protectorates and mandated territories—

Southern Rhodesia	British Guiana
Bahamas	British Honduras
Barbados	Cyprus
Bermuda	Falkland Islands and Dependencies
Gold Coast—	
(a) Colony	
(b) Ashanti	
(c) Northern Territories	
(d) Togoland under British Mandate	
Hong Kong	
Kenya (Colony and Protectorate)	
Leeward Islands—	
Antigua	St. Christopher and Nevis
Dominica	Virgin Islands
Montserrat	
Malay States—	
(a) Federated Malay States:	
Negeri Sembilan	Perak
Pahang	Selangor

Malay States—(*contd.*)

(b) Unfederated Malay States:

Johore	Perlis
Kedah	Trengganu
Kelantan	Brunei

Mauritius

Nigeria—

- (a) Colony
- (b) Protectorate
- (c) Cameroons under British Mandate

North Borneo, State of

Nyasaland Protectorate

Palestine (excluding Trans-Jordan)

Sarawak

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